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ORIGINAL LECTURES.

DIABETES MELLITUS.

A Clinical Lecture, delivered at the Philadelphia Hospital, December 9, 1882.

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(Reported by DAN W. NEAD, M.D.)

GENTLEMEN: The patient whom I show you is 70 years of age, a tailor, who was admitted to the Hospital August 31, 1882. According to his own account, he always had fair health until three years ago, when he noticed that he was passing more urine than usual, and was continually thirsty. At the same time he was annoyed by a dryness of his throat and mouth.

It was with these symptoms that he was admitted to the hospital, and they at once suggested an examination of his urine, which was found to contain sugar. Our first note is dated September 7th, when he passed ninety-six ounces with a specific gravity of 1032, and the next day he passed one hundred and twelve ounces, having the same specific gravity. The first quantitative analysis was made on the 10th, when the urine was found to contain twenty-one grains to the fluidounce. I apply the tests in your presence, and you notice both the Fehling's copper test and Böttger's bismuth test respond promptly, the former precipitating the red cupric sub-oxide, and the latter black metallic bismuth.

You will find in the books, in addition to those named, quite a long category of symptoms, which are at times found associated with saccharine diabetes, but those we note in our patient, viz., dryness of the mucous membranes, unusual thirst, and the passing of an increased quantity of urine, of high specific gravity, and containing sugar, are, after all, those essential to a diagnosis. A frequent mode of termination of the disease is by tubercular phthisis, when, of course, are superadded the symptoms incidental to it. Among others, is an annoying itching about the *meatus urinarius*, caused by the constant passage of the sugar-charged urine over it, and in females this sometimes extends to surrounding parts, producing a distressing *pruritus vulvae*. Emaciation, great muscular weakness, and the loss of sexual inclination are symptoms incident to the malassimilation of ingested food, which, though taken sometimes in more than sufficient quantity, fails to serve its purpose.

Without delaying further, therefore, to discuss the less essential symptoms of the disease so evidently present, let us ask ourselves the question, what is diabetes mellitus? It is scarcely necessary for me to say to you that it is not a disease of the urinary organs. Its study has naturally fallen into the hands of those interested in these diseases, because it requires for its recognition a study of the urine. But the kidneys are simply the organs which eliminate the sugar from the blood, which is there in undue quantity. Glycosuria, or saccharine urine, implies glycæmia, or saccharine blood. If there is no sugar in the blood, there can be none in the urine.

A certain relation of the nervous system to glycosuria has been known to exist since Bernard's discovery that puncture of the floor of the fourth ventricle produced

it. Since then it has been found to succeed upon section of the medulla oblongata, the optic thalami, and great crura cerebri; by destructive lesions of the pons, and middle and posterior crura cerebelli; section of the spinal cord above the second dorsal vertebra; by section of filaments of the sympathetic nerve ascending from the first thoracic ganglion to accompany the vertebral artery; by removal or injury of the superior cervical ganglion; and sometimes, but not always, after section of the sympathetic in the thorax; and even after section of the nerve trunks of the limbs, as the sciatic.

With such glycosuria is invariably associated an active hyperæmia of the liver. It must be remembered, also, that an important function of the liver is the formation of the so-called glycogen or animal starch from the starchy and saccharine articles of food, and to a slight extent from albuminous food. Thus produced, it is stored in the liver, but reconverted into sugar and passed into the blood in such quantities as are demanded by the organism, for oxidation. Remembering this function of the liver, there are two ways in which an excess of sugar may get into the blood. Either the grape sugar, formed by the digestion of sugar and starches, may pass too rapidly through the hyperæmic liver to permit its conversion into glycogen, or having undergone this conversion, it is too rapidly reconverted into grape sugar to be oxidized. The blood soon acquires an excess of glucose, and the latter then appears in the urine. It has been ascertained by experiment that when the amount of glucose in the blood exceeds one-quarter of one per cent. it makes its appearance in the urine.

But in whichever of these ways the result is produced, the hyperæmia of the liver is always present. Hence it follows that whatever will produce such hyperæmia may produce diabetes, whether it operate through the nerve centres or not. Two cases of diabetes have come under my notice in which the symptoms were preceded by biliary colic and passage of gall-stones. The one has disappeared under treatment, the other remains uncured. Artificial irritation of the liver by needles and galvanic currents has also produced glycosuria. While injuries and diseases of the nervous system are often accompanied by glycosuria, there are many cases in which it is impossible to discover any relation between the two conditions, and not all cases of diabetes, nor even a majority, dare be considered diseases of the nervous system. It is not unlikely that sometimes the hyperæmia of the liver is a reflex one, being caused by irritative influences operating through the pneumogastric nerve (which is the sensory, and not the motor, nerve of the sugar-forming process) upon the diabetic centre, and thence through the vaso-motor nerves in the spinal cord and sympathetic upon the bloodvessels of the liver. Among these reflex relations must be placed derangements of digestion, which, acting upon the end filaments of the pneumogastric, produce the requisite irritation and its reflex results. It must be admitted, however, that there are still many difficulties in the way of explaining the phenomena of diabetes mellitus. Thus, admitting that a certain number of cases, which cannot be due to central nervous lesions or disease, are the result of reflex irritation, how are we to account for the continuation of the symptoms after the irritation has apparently disappeared? Can it be that the liver, once thrown into

this hyperæmic state, by reason of a sort of inertia, cannot return to its natural condition while such articles of food are given as stimulate its glycogenic function?

In autopsies, alterations in the liver, both of a gross and microscopic character, are sufficiently frequent to make it reasonable that temporary or permanent changes in this organ are at the bottom of a large number of cases of diabetes. These changes are chiefly of size, color, and consistence. The liver is darker and harder, and, while sometimes it is only slightly enlarged, at others it is three times as large as in health. For the more minute changes I must refer you to the books. But it cannot be denied that these changes may be the result of hyperæmia also. Diabetes has been associated, not infrequently, with pancreatic disease.

It is not impossible also that a transient glycosuria—it should scarcely be called saccharine diabetes—may result from an over-ingestion of sugar-forming substances. Any one may produce on himself a glycosuria by the too free consumption of saccharine and amylaceous foods.

Whatever may be the difficulties in the way of explaining the phenomena of diabetes from the standpoint of digestive derangement, that some such relation exists is shown by the result of treatment. For by far the most frequently successful plan of treatment is that which excludes saccharine and farinaceous articles from the diet. It occasionally happens that this fails to relieve the symptoms, and when this is the case we may infer that some serious lesion of the nervous system is at the bottom, or more likely, perhaps, that the liver has become secondarily so much altered that it cannot resume its functions, and that now even albuminous foods are being converted into sugar. Of the selected food, that which gives the most satisfactory results is a diet of *pure skimmed milk*, or butter-milk. Our patient has been carefully tested on this system of diet. On referring to the notes, I discover that on October 30th he was passing fifty-six ounces of urine, of a specific gravity of 1029, and containing eighteen grains of sugar per fluidounce. On the day before this he passed seventy-six ounces, specific gravity 1038, and containing twenty-three grains of sugar to the fluidounce. On the thirtieth day he was placed entirely upon a milk diet, and we had an immediate diminution in the amount of sugar passed. On November 1st, there were only ten grains of sugar per ounce; the amount of urine passed in twenty-four hours still remained at fifty-six ounces. Replacing him upon a mixed diet, immediately the quantity of urine and the proportion of sugar rose, to be again reduced on restoring the skim-milk diet.

It is found sometimes that a patient is not able to bear a milk diet, although this occurs less frequently than might be supposed. Pure skimmed milk is to be preferred, chiefly because of its easier assimilation. Some observers, of whom Dr. Donkin is the chief exponent, claim that the skimmed milk has a special curative action, but I cannot see any reason for this. All that is removed from it by skimming is the fat, and fat is not converted into sugar in the liver. It is most interesting to observe that under the use of large quantities of milk how much less urine is passed than fluid ingested. The body weight can easily be maintained on a milk diet, although it is impossible to lay down a rule as to absolute quantity required. I have known the weight to be maintained by two quarts per day, and I have known five and seven a day to be necessary. The milk is best administered at stated intervals and in fixed quantities. I always begin with eight ounces (an ordinary tumblerful) every two hours, increasing as required.

If a milk diet cannot be borne, a restricted diet can be obtained, which is better than a mixed diet. A purely

albuminous diet is almost unendurable for any length of time, but there are certain vegetables which contain but a small amount of sugar-producing substance which may be added to meat. Such are the "green" vegetables, including spinach, cabbage, tops of celery, green peas, beans, etc., as well as the acid fruits, and, by a diet such as this, the most surprising results may be obtained. It appears that the vegetable sugars, as those found in berries, are more easily assimilated than cane sugar. Even where a skim-milk diet is well borne, my practice, after the sugar has disappeared, is to gradually add other articles, in the shape of oysters, game, and green vegetables, watching the urine for any return of the sugar; and it is always important to keep a case under observation for some time after sugar has disappeared from the urine.

An article of food which is much missed by some is *bread*, and it is scarcely necessary to say that it is one of the most objectionable, because of the large amount of starch it contains. And I regret to say that I have not found gluten bread a satisfactory substitute. A recent experience will illustrate. I have now under my care, a lady who had been for nine months under treatment for diabetes before I saw her, but in whose case the pure skimmed milk had never been tried. She had finally, in despair of recovery, been allowed to take anything she wanted, and when I first saw her, was drinking a quart of champagne daily to quench her thirst. It is needless to say this was discontinued, and she was put upon a pure skim-milk diet, and an unlimited amount of Apollinaris water. In ten days the sugar had disappeared, and shortly thereafter I permitted the gradual addition of other articles of diet, including green vegetables. All went well until she asked to be allowed to take some gluten bread, which I permitted. In three days I examined the urine, and sugar was again present. The gluten bread was discontinued, and in three days the sugar had disappeared. The resumption of gluten bread was followed by the return of sugar, and its withdrawal by the disappearance of the sugar. Such an experiment is, I think, conclusive. Of course, it is not claimed by the makers of gluten flour, that it is completely free from starch, but as it is already a rather uninviting food in its present state, the inference is, that when it is entirely freed of starch, the bread made from it will be scarcely tolerable. At the same time it must be admitted that the gluten bread contains less starch than the ordinary wheaten bread, and there may be cases in which the starch of the former is assimilated, when the quantity in the latter could not be. The same may be said of the so-called "bran bread," made of unbolted flour. With other substitutes for wheaten flour, as the almond flour of Pavy, bran flour, inulin, etc., I have had no experience.

Are drugs of any use in the treatment of diabetes? I believe they are, although if compelled to rely upon drugs or diet alone, I should prefer diet. The most efficient remedy is probably *codeia*, although I am almost afraid to say this, for a few months ago I should have given the palm to *ergot*, and until recently I have always used it first. The use of ergot is based upon scientific principles, since it is well determined that it exerts a contractile influence upon the walls of bloodvessels, thus counteracting hyperæmia. I have frequently used it, and have no doubt whatever of its efficiency. The best preparation is the fluid extract, which is given in doses of from twenty drops to a fluid-drachm four times a day. *Codeia* is not a new remedy in this disease, having been suggested by Dr. Pavy fifteen years ago. We have found marked results from its use in the case before us. The plan I usually adopt is to begin with half a grain three times a day, gradually increasing the dose, watching its soporific effects,

as well as that upon the pupil. I have given patients in this house as high as ten grains a day, and fifteen grains a day have been given. In this patient, after giving one and one-half grain a day for a few days, we were struck with the smallness of the pupil, but on discontinuing its use for a short time, we discovered that the patient naturally had a very small pupil.

You may ask, have you ever cured a case with codeia? I cannot say I have; possibly, perhaps, because I should be afraid to rely solely upon it, or any other one drug. But such cases of recovery are reported. As is the case with all diseases difficult to cure, there is in addition to those named, a long list which have been put forth as cures. *Bromide of potassium*, also an old remedy, has recently been again brought forward by the French school as peculiarly efficient. I can easily understand how, in a certain class of cases, it would be of value, as those due to hyperæmia of the brain, cases which may be characterized as nervous. We know that emotional causes are often at the bottom of diabetes. Both mental anxiety and physical fatigue have been known to produce the disease, and when purely emotional causes have operated, the bromides may be beneficial, but I have never found them so.

Within the last few days the medical journals have published the treatment of Dr. Clemens, of Frankfort-on-the-Main, by a solution of what he calls *brom-arsenic*, which is probably a bromide of arsenic. Dr. Clemens bestows the most extravagant praises upon the remedy; so extravagant, indeed, that I mistrust it, although arsenic itself has long had a reputation in the treatment of diabetes, and not without reason. I shall, however, make an early test of it. He makes it by adding bromine and arsenious acid to glycerine and water, in such proportions that one drop represents $\frac{1}{16}$ th grain¹ of bromide of arsenic. Clemens recommends it to be given, along with a selected diet, beginning with one drop three times a day, and gradually increasing until eight or ten drops are given per day. He gives it in a given quantity until it ceases to have an effect, and then he increases it, one drop at a dose, until, as he claims, the disease is cured. He also recommends the use of the *constant current* from twenty to twenty-four cells, one pole being placed at the nape of the neck and the other over the liver. This has been recommended by other German therapists. I believe I have tried most of the other numerous remedies recommended in the books for diabetes, but have found them valueless as to specific effects.

Certain it is that we must make different classes of cases of diabetes, and we should never begin treatment until we have as nearly as possible classified our case in accordance with its course. There are cases which can be easily cured by a selected diet; others in whom, while a cure is apparently impossible, the disease may still be kept in abeyance for years, and the patient is practically well. Others again have had sugar in their urine for many years, and seemed not to be seri-

ously affected by it. These are generally stout persons and past middle life. Clemens says, in the article referred to, that the disease in thin, spare persons is generally due to some nervous lesion, and in stout persons to defective assimilation, and in this he is not far wrong. In other cases still, all treatment seems unavailing. The amount of sugar passed may be reduced by treatment, but the patient does not gain any strength. But I believe there are comparatively few cases which, if discovered sufficiently early, are not amenable to treatment. The disease is occasionally overlooked until it has existed for some time. It is well known that it is very much more serious in young persons—say under twenty years of age—than in adults. Yet within the past two years I have known a young girl of twelve years under the care of one of my professional friends recover completely.

Diabetic patients should be careful about permitting any surgical operation. One of the terminations of the disease is gangrene, to which there is a peculiar tendency, and any operation is apt to be followed by gangrene. A year ago a diabetic under my care in this house was blistered upon the foot, and serious sloughing followed.

Cataract is not an infrequent complication, but the operation is not to be recommended for the reasons above given.

ORIGINAL ARTICLES.

BRIEF NOTES ON VARIOLA AND VACCINIA.

BY EZRA M. HUNT, M.D.,

PRESIDENT OF AMERICAN PUBLIC HEALTH ASSOCIATION.

At the last meeting of the American Public Health Association, in the discussion of a committee report on smallpox and vaccination, the author of this paper, in commenting on the various possible sources of vaccine lymph, enumerated bovine lymph derived from animals which had been inoculated, or which had contracted smallpox. An esteemed member of the Association cautioned against placing a hypothesis so nearly exploded before the unprofessional public. While we claim that there are at present good and perhaps sufficient sources from which to derive vaccine lymph, it is due not less to the art than to the science of medicine that we should know all possible methods of prophylaxis.

We therefore propose to give some facts which seem to us worthy of record, as to the transfer of smallpox to the cow and the subsequent securement of vaccine lymph therefrom. Also to suggest the view that cattle are sometimes inoculated in the act of milking, or in some other way acquire the disease, and that possibly all so-called spontaneous cases of cowpox are but a modified smallpox.

The undenied and undeniable fact that Jenner regarded cowpox as the variolous disease in the cow is well known, and should not be forgotten by those who think he was mistaken. The patient observation of such an authority is of itself of great weight. "Variolæ Vaccinæ" was the name he gave it.

Added to this we long since had the actual results of Mr. R. Ceely, of Aylesbury, whom Simon calls, together with Mr. Marson, "the two highest authorities" in Great Britain (see *Report of Medical Officer of Privy Council*, 1858, p. 8).

The actual fact that both he and afterwards Mr.

¹ Mr. R. F. Fairthorne, with Mr. James T. Shinn, apothecary, corner of Broad and Spruce Streets, Philadelphia, has prepared for me a solution of bromide of arsenic, in the following manner: 77 grains of metallic arsenic in powder are added in small portions to 240 grains of bromine, the latter being placed in a long test-tube immersed in ice-water to prevent too rapid reaction, which is very violent. One hundred grains of the terbromide thus obtained are then dissolved in sufficient distilled water to make ten fluid-ounces. One minim will then contain one forty-eighth of a grain.

Since the above lecture was delivered, I have tried the remedy in two cases, both using an unselected diet. In the one case it could not be borne on account of an obstinate diarrhoea. In the second there appeared to be no effect on the quantity of sugar or urine, but the patient has gained a pound a week in weight for three weeks. The quantity reached was 8 drops a day, or $\frac{1}{2}$ grain.

Badcock succeeded in variolating thirty-three kine (about 1837), and that this vaccine lymph came long since to be a part of the vaccine supply of England, is indisputable. Although Mr. Ceely succeeded only twice out of a large number of trials, and Mr. Badcock, of Brighton, in only about 7 per cent. of his variolations, yet this does not disturb the fact that they did each succeed. Besides Mr. Ceely's success in the transfer and protection, Mr. Badcock vaccinated over twenty thousand persons from his stock. In fact, much of what we call Jenner lymph is this, for, as Hart states, "many tens of thousands of persons have been vaccinated with lymph generated by passing smallpox through the cow." Lymph from this source, as used in England, is undistinguishable from the spontaneous cowpox lymph.

The Lyons experimenters, in their failure, gave circulation and credence to the idea that Mr. Ceely mistook a variolous eruption for cowpox vesicles. The abstract of facts, as referred to by Ernest Hart in *The Truth About Vaccination*, page 17, shows that Mr. Chauveau and his colleagues were not well informed as to the details of Ceely's experiments. He knew the "tumid papules" full well, and how to distinguish them from the vaccine pustule. (See Robert Ceely's experiments, *Trans. Prov. Med. and Surg. Assn.*, vol. viii. and x., Surgeon-General's Library, Washington.) Dr. Seaton did not doubt the identity of cowpox and human variola (see Seaton's Hand-book). The facts given by Dr. Hardaway in his *Essentials of Vaccination*, 1882, pages 30-34, are confirmative of these views. It is true that at the Brown Institution, Dr. Klein in 1878 failed to produce vaccinia from human variola in thirty-three trials. But Dr. Buchanan, chief of the Local Government Board, in the report for 1879-80 (page 10), says as follows:

"Investigation into the evidences of pathological identity between smallpox and cowpox was made by Dr. Klein during the year 1878-79. Like Gasner, Thiele, and Ceely, he attempted to produce vaccinia in the calf by inoculating the animal with human variola; but hitherto his results have so far differed from theirs, that in thirty-three instances his experiments have failed of producing recognizable vaccinia. Yet there is nothing in these observations that can safely be regarded as disproving the transmissibility of one into the other disease; no doubt the conditions for the transmutation are not yet understood. But there are indications that the affirmative result obtained in a certain proportion of cases by the earlier observers may turn out to be an affair of conditions and circumstances of experiment. Particularly a note appended to Dr. Klein's tabular report (pages 135-142 *cit.*), is of interest in this respect as showing how some unascertained difference in conditions of experiment have yielded in his hands very different results from those of the French Commission in 1865." The success of Dr. Voigt, Supt. Vaccine of Hamburg, whose treatise has been recently translated (see *N. C. Med. Journal*, Dec. 1882), seems to us to settle the question as to the feasibility of producing variola-vaccinia.

In 1830 Dr. Sonderland claimed to have excited variola in cows by enveloping them in infected

bed-clothing. A statement made by Dr. Abbott, of Wakefield, Massachusetts, at the last meeting of the American Public Health Association, and to me personally by Dr. Ribble, of Trenton, also seems to suggest the probable transfer in a similar way.

Taking together the views of Jenner, Gassner, Ceely, Badcock, Thiele, Seaton, Voigt, and others, we are surprised that a belief in this source of lymph, and perhaps of this origin of so-called spontaneous cowpox, is not more common. To these, however, we desire to add two reliable testimonies in this country. Dr. Horatio Adams, of Waltham, Massachusetts, in an address entitled "Investigations upon the Subject of Vaccination," read at the annual meeting of the Massachusetts Medical Society, May 26, 1858, uses the following language and gives the following detail of his experiments:

"The fact is probably familiar to all, that within the last twenty years it has been shown that the cowpox can be produced by inoculating the cow with variolous matter. In the October number of the *British and Foreign Med. Review*, for 1839, may be found an account of Mr. Ceely's experiment of inoculating the cow. Soon after this in conversation with a gentleman, whom, in the words of another, I am privileged also to call my teacher, my physician, my friend, James Jackson, it was arranged that the writer should repeat Mr. Ceely's experiment as soon as pure smallpox matter for the purpose could be procured. A brief account of this experiment, the first it is believed that was ever performed in this country with successful results, may not be out of place here.

"On the 11th of January, 1840, I made several punctures with the point of a lancet under the cuticle on the right labium pudendi of two different cows; none of the punctures were sufficiently deep to draw blood. Into each of them was introduced a pointed quill well deluged with variolous matter, and allowed to remain for half an hour.

"On 15th, the punctures were barely visible, but not apparently inflamed.

"On 16th, two of the punctures made on the youngest cow were more distinctly visible; in drawing the finger over them, a slight hardness was felt. None of the other punctures had inflamed.

"17th.—These two punctures were more inflamed and a little raised, showing a pearly white, flat top, rather small.

"18th.—Punctures larger than yesterday, and each capped with a pearly white, flat vesicle, with centre depressed.

"19th.—The punctures (now vesicles) are enlarged, centres depressed.

"20th.—Each of the vesicles is nearly four lines in diameter; surface pearly white, flat, with centres depressed, areola not formed, slight crust in centre. This P.M., end of ninth day of disease, punctured one of the vesicles; found cuticle thick, spongy and breaking, like what is seen when a vaccine vesicle is early punctured on the arm. Vesicle distinctly cellular. Transparent lymph oozed from the opening, with which I charged twenty quills. Cow appears perfectly well.

"21st.—No material change.

"22d.—Vesicle larger and more full, areola forming. Dipped several quills to-day; lymph pellucid. Drs. J. D. Fisher, C. Putnam, and Gregerson examined the case to-day.

"23d.—Crust forming rapidly, areola somewhat increased in extent, three-fourths of an inch in diameter, round and regular, and somewhat raised above surrounding skin. Cow eats as usual. From this date disease rapidly subsided; a very dark crust was soon formed. On 27th, Drs. Fisher and Putnam brought me virus taken from a child vaccinated on the 21st instant, with the matter taken from this cow. The vesicle, as they both affirmed, exhibited the characteristic marks of the true cowpox on the sixth day of the disease. Many persons were subsequently vaccinated with matter taken from this cow, and in every instance the true vaccine disease was the result.

"This discovery of the identity, or rather, I should say, this proof of the identity of the vaccine and variolous diseases, is the most important fact observed in relation to the cowpox since the original discovery of Dr. Jenner. For if any doubt should ever arise as to the genuineness of the virus in use, or if it should at any time be lost, as it frequently may be in certain localities, and smallpox makes its appearance, it can be reproduced with certainty by inoculating the cow with smallpox virus."

The large experience of Dr. Adams, and the facts as detailed, leave no doubt as to the reality of his success.

A few months since I had a conversation with Dr. W. C. Van Bibber, of Baltimore, who related to me a series of facts which interested me so much that I asked him to communicate a brief outline by letter. He was so kind as to forward me the accompanying statement, which speaks for itself:

"When I came here in 1845, I found vaccine matter then in the hands of Dr. Peter Chataud, who had been in the practice of medicine here for fifty years. He was one of the originators of vaccination here—and had such enthusiasm that after vaccinating his sons he sent them into the room of a variolous patient. This was in order to establish popular confidence.

"During 1845, '46, and '47, variola was epidemic here. The late Dr. Levin S. Joynes and myself studied it together.

"Dr. William Seward was the 'city physician.' He inoculated a cow; that is, took matter from an eighth day variola pustule, and inoculated it into the shaved udder of a three year old heifer.

"Dr. Joynes and myself obtained some of this matter, and carefully compared its pustules with the other matter.

"The entire subject here was then much discussed by the old doctors and the young. I was then among the latter.

"I can give some of the points there observed, and can now follow or supplement them by results.

"I had a large acquaintance around the city, and supplied vaccine matter, in crusts at that time, largely. This was then the only source of supply country physicians had. Any one who would supply his professional brethren on call with vaccine

matter, was considered a friend in need. I can give some points of information on the matters then under discussion and observation, and which have as yet not been entirely decided.

"Again, in 1852, Dr. Samuel Knight was 'city physician.' An epidemic of variola appeared, not as extensive as that of '45, but still it was bad. Dr. Knight went to the smallpox hospital and took a skein of silk which he charged heavily with lymph from eighth day pustules.

"He had a four years old cow in his own stable on Pearl street. He shaved the udder of the cow and made superficial incisions in its skin. Into these furrows he drew the charged silk, and made a very bold application of the matter. The cow went through a severe disease, and the eruption was very nearly, but not exactly on time; that is, it was not umbilicated on the fifth day, but continued vesicular until the ninth day. On the tenth, eleventh, and twelfth days the cow did not rise up nor eat. She evidently had a high fever, as shown by her appearance, quick respiration, and thirst. Thermometers were not used then. There were many pustules over the body of the cow; about thirty of them, principally from the udder and belly, were preserved. I selected two for my own use. They were circular; about three-eighths of an inch in diameter; dark mahogany color, with cellular markings, uniform thickness, umbilicated, dry, and hard; having been removed by the finger-nail from the udder on the twenty-third day after the operation. I was the first one to use the virus of one of these crusts. I vaccinated a healthy German five months infant upon the left arm near the insertion of the deltoid in two places. Other physicians saw the case with me during its progress, old physicians and young ones. Amongst the elder ones, I may mention as now living Dr. Ferdinand Chataud, son of Dr. Peter Chataud, and Dr. Thomas Buckler, now living in Paris; Dr. McKenzie and Dr. John O'derman and others, who are dead. They were experienced vaccinators with the original matter which I found here. The vaccinations took in both places, and one proved larger than the other, as is generally the case. But the points were popular to the end of the second day; commenced to be vesicular at the end of the third; umbilicated at the end of the fifth; round and full at end of eighth; and then commencing to be opaque. The areola was large; the fever high on the ninth and tenth days, subsiding on the end of the latter day. The pustules desiccated until the twenty-second day, and when removed, the epidermis beneath them was dry. They had all the marks of a good crust; regularly round, dark color, uniform thickness, umbilicated, cellular markings, dry and hard.

"I then dropped all my old matter and used this, supplying it largely throughout this city, this State, and adjoining States.

"I have never known any one who I vaccinated with this matter to take the varioloid, although I have known numbers to be exposed to the disease.

"I kept this matter alive, active, and largely disseminated for twenty years. About 1871 or '72, M. Lanoix, M.D., from France, came here for the

purpose of introducing the Beaugency matter. He came here from the house of Milhau of New York, and established a vaccine farm near Petersburg, Virginia. My brother-in-law, Dr. Ferdinand Chataud, entertained him. At this entertainment the subject of vaccine was discussed. Lanoix maintained that when the matter was taken from the calf there was no danger of spreading other poisons, as syphilis, scrofula, etc. Unwilling to give up my old matter, which had apparently answered so well, I asked the question "which, as a general thing, is the most healthy animal, a calf or a baby?" It seemed to be the opinion of the majority present that the calf was the most healthy. But, in revenge, I contended that it was a poor doctor who could not select a healthy baby. However, public opinion forced men to give up my matter, although Dr. John Morris and others here urged me to keep on supplying them. But soon a vaccine physician was appointed, the late Dr. Registrar, and every one used the "animal" virus. Gradually I have lost trace of my old stock. In this way I have seen, used, and taken great interest in vaccine matter from four different supplies. First, from 1845, the vaccine matter which I found here as used by the older physicians then practising here, who had obtained it from some original European supply, I do not know where. Then about 1847, I used the Seward supply, but did not give up entirely the original matter until 1852, when I used the "Knight" supply to the exclusion of all others. And since probably 1876, I have used none other than the "animal" matter, as propagated by Dr. Martin and others from the Beaugency supply. Dr. Chataud did not like the matter as supplied by Dr. Lanoix, nor did I.

"I can get all the facts, dates, and observations to fill up this rough sketch, my Dear Doctor, if they will be of any use to you or others, and meanwhile believe me to be, with much respect," etc.

In the light of recent facts such as have been brought to notice by Pasteur, Koch, and others, and of the embarrassments which may yet come to attach to the production of lymph from "spontaneous cowpox," about which there is still dispute whether any case has occurred in this country, it is not unwise to put on record these facts.

Even if the first lymph from a variolated cow might be over-severe, or if there might be a risk of mistaking the "tumid papules" of the variola for the lymph-bearers of vaccinia, it is not unlikely that the repetition from calf to calf might furnish an attenuated lymph sufficiently protective. If so, would it not be purer in its origin, and at the same time furnish us a mode of renewal of supply more uniform than the present dependency upon stocks already far removed and probably not now propagated in distinct lines?

We are not of those who doubt the reality of present protective methods, or who would advocate resort to experiments of this character, except under some special State or Government sanction or direction. But fealty to science, to art, and to series of facts thus authenticated, makes it proper to put on record this testimony. All the more because of the great experience of Voigt in bovine lymph, and of

the important opinion which he gives when he says, "As a zealous promoter of animal vaccine, which has become indispensable to me, I will not insist again upon its usefulness; but, in conclusion, I will point out that it should be *regenerated betimes* in order that it may maintain its full energy. *To me it seems that animal vaccine* needs such regeneration quicker than the humanized."

TRENTON, N. J., February 14, 1883.

A CASE OF CEDEMA UVULÆ, THREATENING THE LIFE OF THE PATIENT.

BY CHARLES H. CARTER, M.D.,
OF CHICAGO, ILL.

A FEW weeks since I was consulted by Mr. N., æt. 19, for a "sore throat." This was about 9 A.M., and he had felt no inconvenience till, upon rising that morning, he experienced considerable difficulty and pain in swallowing his breakfast; otherwise, he felt, to use his own phrase, "all right."

Upon examination I found a moderate congestion of the whole post-oral cavity. Tonsils and soft palate slightly swollen, the mucous membrane dry and shiny. Temperature $99\frac{1}{2}^{\circ}$; pulse 84; tongue clean but dry, and some thirst. No headache or other pain. Had had no chill, nor chilly sensations. Slept well the preceding night, and, notwithstanding the pain caused by the act of deglutition, he ate his breakfast with the usual relish. In short, he had no subjective symptoms indicating that he had "caught a cold," other than the soreness in the throat, and had undergone no unusual exposure.

Calling it a simple pharyngitis, I ordered a seidlitz powder, a solution of potassium chlorate as a gargle, and a flannel around the neck. Knowing him to be of good habits, and he being a furniture upholsterer, working indoors, I had no hesitation in permitting him to continue work as usual. I advised him to consult me again at the same hour the following day, and thought no more of the case, until one o'clock next morning I was aroused by an anxious ringing at my doorbell, and upon attending to it, I was informed by an almost breathless messenger that Mr. N. was dying—choking to death. I subdued a half-uttered "impossible!" and not waiting for any further explanation, and thinking of cedema glottidis or an unusually sudden and excessive swelling of the tonsils, etc., I dressed myself with all possible haste, and was soon at the residence of my patient. A truly terrible spectacle presented itself to my view. He was certainly struggling against impending suffocation, and that with fearful odds. The location of the obstruction, however, was at once apparent, for he was sitting with his head bowed forward, holding the stem of a tobacco-pipe in his mouth, breathing *through* it. A glance into his mouth revealed the cause of his dyspnoea. His uvula was so large that it completely filled the whole inter-tonsillar space and pressed hard upon the dorsum of the tongue, and as he could not breathe through his nose, the uvula and palate evidently closed that passage also.

The cedematous uvula resembled a bladder filled with clear water, and was so distended as to be

almost transparent. I quickly punctured it at several points on its anterior surface with a bistoury. This lessened its size in that portion, but had no effect on the unpunctured sides. Passing a spatula under it and turning it up edgewise, gave him plenty of breathing room, and his dyspnoea was at once relieved, the air then having ready access to the glottis, which was obviously unaffected. Drawing the uvula forward from each side with a tenaculum, I successively drained its lateral and inferior surfaces. He had now no further use for the spatula, and felt comfortable, but almost exhausted. Now passing a loop of stiff wire behind the uvula and drawing it forward, I riddled the posterior surface with the point of the tenaculum, and finally I transfixed the body of the uvula twice from before backwards with a small tenotomy knife. This being done, he could respire through the nose with ease.

All this scarification and transfixion drew only a few drops of blood, and were almost painless.

The uvula now hung in a flabby, irregular, wrinkled mass, apparently having lost all contractility; its lower extremity lying upon dorsum of tongue, but leaving a small space open on each side. The tonsils were more swollen, but paler, than on the morning before. Temperature now 102° ; pulse 108, and weak.

Deeming an astringent indicated, I added tannic acid, gr. x to $\frac{3}{4}$, to his chlorate of potassium solution as a gargle, and left him happier than I found him.

A bilateral suppurative tonsillitis followed, but its course was thenceforward typical, and ended in complete recovery in two weeks, under the use of warm poultices, externally and my usual "let-alone" treatment of such cases, internally. I have rarely found it necessary or even advisable to resort to incision to expedite the evacuation of the pus, nature, in most cases, being surgically self-sufficient.

I have frequently noted a moderate degree of oedema uvulæ in connection with pharyngitis or tonsillitis, but never before of such prominence as to be more than a minor accompaniment. In this case it was the disease *per se*, and the other pathological phenomena the complications.

The above case is, in my experience, unique, and judging from the very slight references or even silence of authors on diseases of the throat, concerning oedema uvulæ, such cases must be very rare. My patient was thoroughly convinced that his time had come, and this also was the conviction of all the anxious spectators of his struggle for life. He stated that the swelling in his throat had gradually increased after seeing me in the morning, but he had had no difficulty in breathing through his nose till about half an hour before sending for me, and this increased rapidly till that source of oxygen was also cut off, and then, in some way or other, in his desperation, he seized the pipistem and forced the end of it into his throat, and felt the air pass through it, though in very inadequate quantity, and held it there till I arrived. I have no doubt that by means of this simple though much abused instrument, he was rescued from being asphyxiated, be-

fore help could be procured. He said he did not think of the pipistem being a *tube* when he inserted it into his mouth. Did not know what was his object in using it. In fact, did not remember anything about the pipistem up to the time when he felt the air passing through it. So much in favor of the clay-pipe. This one was not made in vain.

The above case being interesting and novel to me, I have thought it worth relating for the readers of THE MEDICAL NEWS. No doubt some will be as much surprised as I was, to know that so insignificant a part of the economy as the uvula may thus *jeopardize life*. Others may have seen similar cases. If so, I for one, would be gratified to see them reported.

1198 MILWAUKEE AVENUE.

MURIATE OF QUININE.

(QUININÆ HYDROCHLORAS, U. S. P., 1880.)

BY JOSEPH MIXSELL, M.A., M.D.,

OF PHILADELPHIA.

CUSTOM and habit together have bound each successive generation of physicians to the exclusive use of certain combinations of drugs whose choice was originally the result of accident or commercial convenience.

This assertion will be studied in the present instance in its bearings upon the medicinal application of the principal alkaloids derived from cinchona; as of these, quinine has deservedly occupied the most prominent position in therapeutics, its selection, as an example, will be assumed as most proper.

This substance has been quoted ever since its discovery and isolation—in combination with sulphuric acid, in its familiar form as the sulphate of quinine—by all writers with but few exceptions, to the extent of obtaining tacit recognition as the standard or normal state of the drug, few reporters ever specifying the salt by title; and several high authorities confirming this usage by explicitly calling attention to the fact that whenever the expression quinia (quinina, 1880) is used the reader will understand that the sulphate of quinia is intended.

The writer was led to the examination and employment in practice of the combination of hydrochloric acid with this and associated alkaloids, through the ideas suggested by observing that the valuable and interesting experiments of E. Buchanan Baxter, M.D., London ("Action of Cinchona Alkaloids, etc., on Bacteria," *Practitioner*, Nov. 1873), were conducted exclusively with solutions of the hydrochlorates of the alkaloids. Reference to the standard works on pharmacology in general use in this country, showed complete indifference on the part of authors and editors on this subject, until the publication in 1879 of a portion of Phillip's *Mat. Med. and Therapeutics* ("Wood's Library Standard Medical Authors," N. Y.), where brief allusion is made to the experiments of Dr. Baxter—in their microscopical and toxicological bearings, without suggesting their possible importance in the light of therapeutics.

The *National Dispensary* (Stillé & Maisch, second edition, Philadelphia, August, 1879), after

devoting over fourteen pages to the consideration of quinia (quinina) as a sulphate, gives just as many lines to the description of the hydrochlorate—hidden from observation by association with the other little known salts under the caption "valerianate of quinia." The *United States Dispensatory* (Wood & Bache, fourteenth edition, Philadelphia) merely alludes to the existence of these salts, in the same category with the fanciful combinations, as the lactate, arseniate, etc., without a word of commendation.

The *Pharmacopœia of the United States*, sixth revision, introduces this salt for the first time as an officinal along with the sulphate, bi-sulphate, hydrobromate, and valerianate, and the uncombined alkaloid; from the purely pharmaceutical character of this work in its present state of incompleteness, no information is obtainable save that of chemical characteristics. The impressions of the writer, then, are based entirely upon the experience obtained by the opportunities afforded within the necessarily limited field of private practice, and this under the serious obstacle of an almost prohibitory price demanded by the manufacturers and dispensers of the substance; and it has only been by direct persistent personal effort that at the present time this salt is placed within the reach of patients in moderate circumstances. In this connection he is compelled to refer to the unfair discrimination on the part of the large producers of these salts in favor of the commercial sulphate and its associate the bi-sulphate. That this is entirely based upon commercial prejudices is beyond question, the writer having received the most respectful attention in his direct application to all the large manufacturers of the derivatives of cinchona bark in the United States, but with such moderate success in obtaining concessions in price as to dishearten him as to the use of further individual effort. The therapeutic harmony of this combination of either of the cinchona alkaloids will occur to the mind of the careful prescriber as of peculiar fitness; but not upon this alone does the writer urge the claims of the muriates, which may be enumerated as follows:

I. *The advantage of superior alkaloidal strength*; II. *More rational therapeutic combination*; III. *Prompt action—due to speedy absorption*; IV. *Extensive range of pharmaceutical compatibility*; V. *Ready solubility without aid of acid*; VI. *Tolerance by stomach or rectum*.

The comparative richness in the basic element is thus well shown.

The theory of its composition, as formulated in the *United States Pharmacopœia* of 1880— $C_{20}H_{24}N_2O$, HCl_2H_2O , requires a percentage of quinine of 81.71; that of the sulphate being 73.5 (misstated on page 1212 of the *National Dispensatory*, second edition, as 85.0), and the bi-sulphate 59.1, a difference in favor of the muriate of respectively 8.21 and 22.6 per cent.

By actual analysis made with great care and in every instance verified by the process known as "acid determination"—whereby the most common source of error in the estimation of quinine strength is avoided, that of the invariable loss in washing

the precipitate whenever the "direct process" is employed (by the kind assistance of Edward Hart, Ph.D. [J. Hopkins], Professor of Analytical Chemistry, Scientific Department Lafayette College, Easton, Pennsylvania, 1880)—it was found that an actual alkaloidal yield of from 81.4 to 84 per cent. was obtained, probably due to the loss of some of the water of crystallization.

The identity of therapeutic applicability possessed by quinine and hydrochloric acid will be questioned by few, both exhibiting azymotic powers in the highest degree.

The quality of readiness of absorption is probably its most valuable attribute. Where promptness of action is desirable, as in the anticipation of the chill in the pernicious form of malarial toxæmia, or where, through the unfavorable condition of the oral and gastric surfaces, due to the accumulation of epithelium and inspissated mucus, the less assimilable forms of quinine do not obtain access to the absorbing tissues, the muriate, from its relations to the fluids of the body, will obtain entrance to the circulation to a degree surprising to those unfamiliar with this peculiar power.

Its chemical relationships give it a wider range of pharmaceutical combination than the sulphates possess.

In the familiar instance of the almost classic prescription of the alcoholic solution of chloride of iron, alone or with potassium chlorate, with quinine, which is usually specified as in the form of sulphate, a most disagreeable and unscientific result is obtained, that of a precipitate of a portion of the iron in the form of a gummy sediment—a basic sulphate, similar to the styptic salt of Monsel; it is true that this is often avoided by the skilful pharmacist, by converting the quinia into an acid salt by the addition of a few drops of hydrochloric acid before combining it with the iron solution, but this is not to be relied upon, and may result in the dispensing of an almost corrosive mixture in place of the neutral one intended. The substitution of the muriate for the sulphate of quinine will obviate this difficulty; so too with potassium iodide or bromide, although owing to the presence in the commercial salts of a small amount of potassium carbonate, the addition of an amount of hydriodic or hydrobromic acid is needed to ensure the absence of precipitation.

Ready solubility in watery or alcoholic fluids, nearly equal to that of the much advertised bi-sulphate, far greater than that of the commercial or neutral sulphate. Although much stress has been laid upon the great advantage possessed by the acid sulphate over its older companion, clinical experimenters seem to have overlooked the counterbalancing disadvantages of increased dose, and, until the bubble was burst in the "wars of the pill-makers," increased cost. Although the writer's lack of time and opportunity has not permitted him to apply other than clinical tests to the comparison of the muriate with all other forms of quinine administration, he is still convinced of the equal solubility of this salt in the gastric fluid, as shown by the very simple and unquestionable test afforded by the production of cinchonism. In the practical employ-

ment of this salt, it will be found that the addition of a few drops of strong alcohol to a gramme of the muriate will render the crystals so permeable that the addition of a very moderate amount of water will effect a perfect solution—this in view of the effects shown in the paper of Dr. Baxter, *loc. cit.*, upon bacteria growth, has led to its trial as a local application in diphtheritic angina, by brushing the exuding surface every hour or two with a saturated solution prepared as mentioned, or with the addition of aqua chlorinii, with apparent advantage in limiting the disease to its original locality. The stomach will tolerate this, if properly administered, when other salts of quinine are promptly ejected.

The absurdity in the practical work of medicine, of compromising the activity of medicinal agents, by so combining them as to procure immunity from taste at the expense of solubility in the fluids of the stomach, is nowhere so glaring as in the various devices by which both practitioner and pharmacists have from time to time conspired against the welfare of their patients and patrons, in their dealing with this life-saving drug. The tannate will represent the most aggravated instance of this misconception; however valuable where its *acid* constituent is the one needed, as a means of administering quinine it is irrational and unscientific. Nausea is not always, nor even often, produced by taste, and when the stomach is irritable and disposed to reject anything placed within it, it will be found least apt to do so with *neutral* solutions. In the bilious remittents found along the water-courses draining into the Lehigh Valley—when the remission was so feebly separated from the pyrexia that the whole intestinal tract was in a state of exalted sensibility throughout the entire cycle of twenty-four hours, with rejection of everything administered as food or medicine—this combination of quinine has been successfully administered (in sufficient doses to obtain its apyretic influence), dissolved in freshly tapped champagne, without a word of complaint from the patient. With an experience of nearly twenty years spent in the dispensing and prescription of this remedy, in its several forms, the writer is disposed to regard as the ideal mode of its administration that of "*capsulation*" IN THE DRY WAY, *i. e.*, while yet in the crystalline state, *without* the preliminary operation of forming a pill mass; the latter is chiefly objectionable on account of the usual addition of some gummy excipient, which speedily hardens, rendering the salts less soluble than when discrete in the crystalline state, often ensuring gastric or enteric disturbance through mechanical irritation from slow solution.

If given in champagne or other spirituous or syrupy vehicle, a solution should be prepared as directed for topical application before addition, to insure complete admixture. The rectum will most readily tolerate and promptly absorb this salt, which can be introduced by enema of simple watery solution, or by suppository—the *hollow* variety affording the simplest means of placing it within reach of the absorbing tract.

In concluding this very incomplete *résumé* of the reasons entitling this little-used group of salts to

our earnest consideration, the sole objection to their frequent substitution for those in common use—that of costliness—will bear a parting word. That this is not an insuperable obstacle may thus be shown:

The main cost to the makers of all the cinchona salts is that of the extraction of the alkaloids from the bark; so that it may be fairly assumed that the cost of either of the salts of quinine to the manufacturer would be principally that of the relative amounts of the alkaloid required to produce a given weight of any one of them. Admitting the correctness of this proposition, if the cost of producing one ounce of the commercial sulphate of quinine, requiring the outlay of 73.5 per cent. of its weight of the alkaloid, is at present somewhat less than \$1.80, the cost of any salt would bear a definite relation to this fundamental representative. Thus, in estimating the value of the muriate, 73.5 : \$1.80 :: 81.17 : \$2.00. Or, as to the bi-sulphate, 73.5 : \$1.80 :: 59.1 : \$1.45.

To divest this statement of all complexity, it will suffice to claim that if the manufacturer can produce and sell at a profit, an ounce of a combination of which the costly element is represented by 73.5 parts to the hundred, at \$1.80, a second combination containing in every hundred parts 81.7 of the same costly ingredient, should be offered at the relative price of \$2.00, or a third combination in which there is contained only 59.1 per cent. at its true value based upon its relative composition, \$1.45.

It is, however, due to the makers of these salts to admit that the cost of material is not absolutely the only factor in the disparity of trade and therapeutic value. By reason of the vast consumption of the sulphates their crystallization is effected on so extensive a scale that labor and apparatus are both reduced to a minimum of expense; while that which to us, as therapeutists, constitutes a great advantage—the extreme solubility of the hydrochlorates—is commercially a disadvantage, rendering their separation from the mother-liquor tedious and difficult, demanding a higher grade of intelligence on the part of those conducting the operation, hence enhanced cost of labor; still another impediment to parity in expense of production is found in the character of the material from which the vessels for evaporation, etc., are made, porcelain or wedgewood-ware alone being suitable.

A portion of this cause of expense can be dispensed with by the presentation of the salt in its amorphous form, found by Kerner, of Frankfort (*Practitioner*, March, 1873), to be equally active, if not superior, to the crystallized form. This is not procurable in this city, in its isolated form, the nearest approach to it being the "muriate of quinquina," of "The Charles T. White Co.," of N. Y., a residual product of quinine manufacture of variable composition, containing always about 20 per cent. of crystallizable quinine.

The well-known house of W. H. Schieffelin & Co., of New York City, have, at the suggestion of the writer, included the muriate of quinine in their list of gelatine-coated pills.

Through the enterprise of Messrs. Keaseby &

Mattison, of Philadelphia, the hydrochlorate of cinchonidine was placed before the profession in December, 1880; but, from the extreme solubility of the salt and the resultant difficulty of presenting it in a crystalline state, its costliness proved a bar to its general adoption.

The hydrochlorate of cinchonine is made in large quantities, and has been sold for a long time; not, however, without the suspicion of entering largely into the adulteration of the sulphate of quinine, which it closely resembles, at the hands of fraudulent pill-makers and jobbers, whose sales are made in the remotest portions of our country.

With a favorable impression of the utility of the "unbleached or hospital quinine," only presented as a sulphate, the writer suggests its production as a hydrochlorate, that the most needy may not be debarred from the use of the most active remedies.

Finally, no credit is claimed by the writer for his comparatively superficial, although always practical, researches in this field. The paper is placed before the readers of "THE NEWS" that it may be tried as to its worth, and save others the labor and expense its preparation incurred.

NOTE.—The *United States Dispensatory* (Wood, Remington, and Sadler, 1883), just issued, confirms the writer's assertion that medical authorities, as a rule, show positive lack of acquaintance with the theoretical as well as practical superiority of the hydrochlorate over the sulphates; this combination being dismissed by the above-named compilers with a careless remark as to its intrusion among the officials without good reason.

No excuse can be offered for so glaring an omission; simple inquiry of either of the great quinine-producing establishments of this city would have shown that since the earlier efforts of the writer to familiarize the profession with the usefulness of this and other muriates [annual meeting Lehigh Valley Medical Association, Bethlehem, Pa., August, 1880, reported in *Trans. Med. Soc. of Penn.*, vol. xiii., part 2], the salt is in active demand, hundreds of ounces being produced where formerly it was rarely called for.

822 N. TWENTY-FIRST ST., PHILADA., Jan. 1, 1883.

HOSPITAL NOTES.

ST. JOSEPH'S HOSPITAL, PATERSON, N. J.

Service of G. H. BALLERAY, M.D.

SUB-PERITONEAL HÆMATOCELE.

(Reported by JAMES W. SMITH, M.D., House Surgeon.)

A CASE of sub-peritoneal hæmatocele was admitted into the hospital in December, 1881. The patient was 26 years of age, the mother of four children, the last two of which were twins, and were born in April, 1881. The menses appeared during the last week in October, reappeared in three weeks, and after being absent one week, returned, accompanied by pain in the back, and continued up to the time of her admission to hospital. Two weeks before admission, a substance was expelled from the vagina, which, according to the description of the patient, "resembled the lining of a chicken's intestine."

On admission, the patient was in the following condition: Pulse 112, very feeble, face pale, lips blanched, abdomen tympanitic, temperature normal. The discharge from the uterus resembled lochia, and was somewhat offensive. Physical examination revealed a tumor, rising about three inches above the brim of the pelvis, globular in form and regular in outline. This tumor was situated to the left of the median line; several other large masses, of irregular outline, could be felt through the thin abdominal walls, at different points in the abdomen. Per vaginam, the cervix uteri was found crowded over to the right, and pressed up so closely against the pubes, that it was reached with difficulty. When the os was reached, it was found patulous, admitting the index finger easily for some distance. By conjoined manipulation, the smooth globular tumor felt above the brim of the pelvis, was found to be continuous with the cervix. To the left of, and posterior to the uterus, a large, smooth, slightly fluctuating tumor could be felt, which was continuous with the uterus, and but slightly tender to the touch.

The patient being in a very critical condition, a consultation was called, the day after she was admitted to the hospital, with a view to obtaining the opinion of the staff as to the nature of the case and the advisability of an operation. The opinions of the members of the staff differed widely as to the nature of the case, and, consequently, as to the best treatment to adopt. Drs. Balleray, Van Riper, and Calvin Terriberry, were of the opinion that the case was one of extra-uterine pregnancy; while Dr. Marsh thought it might be a case of malignant disease,¹ and Dr. Quinn believed it to be a morbid growth connected with the uterus and bound down in the pelvis, but in no way connected with gestation.

It was finally decided to aspirate the fluctuating mass in the vagina. The aspirator needle was plunged into the mass, but nothing was obtained but a small quantity of dark, bloody fluid, containing numerous small, dark coagula. This caused Dr. Balleray to modify his diagnosis. He then expressed the opinion that the case was one of sub-peritoneal hæmatocele, due to rupture of the Fallopian tube, at its lower part, at an early stage of tubal pregnancy, and an escape of its contents, together with a considerable effusion of blood, between the layers of the broad ligament; and some inflammatory exudation in the surrounding tissues. The patient was put to bed, perfect quiet ordered, with nourishing liquid food and some stimulants; the vagina to be syringed out twice daily with hot water, followed by a weak carbolic lotion. On the fifth day after the aspiration, the pulse became more frequent and the temperature began to rise.

On the seventh day, Dr. Balleray observed, while making a digital vaginal examination, that the discharge was increased in amount, and more offensive than usual. He therefore suspected that a portion of it came from one of the openings made with the aspirator. The following morning the patient's pulse was 120, temperature 103.4°. She was placed on the operating table in Sims' position, and Sims' speculum was introduced, and the posterior vaginal wall retracted. It was then found that a grumous, dark, bloody, offensive discharge was issuing from the opening made with the largest aspirator needle. A free incision was made into the softest part of the tumor with a bistoury, when about two ounces of thick, dark, grumous, bloody

¹ Dr. Marsh formed this opinion from the feel of the hard, irregular masses before referred to, which were to be felt in different portions of the abdomen. Dr. Balleray, however, thought that these masses were fecal accumulations, and this opinion proved to be correct, as they were subsequently removed by repeated large enemata containing ox-gall.

fluid escaped; together with considerable debris of blood-clot. The patient was then put to bed, and the nurse directed to continue the vaginal injections.

The following morning the temperature was 102°, pulse 108. The patient was again placed on the table, a soft catheter introduced into the opening made with the bistoury the previous day, and a weak, warm carbolic acid solution was injected into the cavity. The catheter passed in to the depth of three and a half inches. By means of the injections, dark, broken-down, offensive coagula were removed. The injections into the cavity were repeated daily, and the vaginal injections continued. On the fourth day after the operation, some exceedingly foul-smelling material, resembling a mixture of pus and debris of partially organized blood-clot, was removed by the injection. After this the temperature fell to 100°, and never rose again above that point. The injections were resorted to daily for nine days, after that only every second day for some time longer.

At the end of three weeks the cavity had contracted so that it would not hold a half ounce of fluid; the swelling previously felt in the vagina had almost entirely disappeared; the cervix was in its normal position, and the fundus no longer to be felt above the pubes. At the end of four weeks the artificial opening had closed; the patient's appetite was good, the temperature and pulse normal; in short, convalescence was fully established. The patient returned to her home in Passaic city, and is now in good health.

The interest of this case attaches to the diagnosis. What was the cause of the hæmatocele?

If it was due to rupture of the Fallopian tube at an early stage of tubal pregnancy, then the woman ought to have had some of the symptoms of pregnancy previous to the accident, but the fact is that these were entirely wanting. She ought also to have manifested some symptoms of shock at the time that the rupture occurred, but no such symptoms were observed. On the other hand, what other condition than that to which they were attributed could have given rise to the enlargement of the uterus, the patulous os, and the discharge of a deciduous membrane? The treatment was justified by the result. Those who saw the patient were convinced that she recovered in consequence of the treatment, not, as very often occurs, in spite of it.

MEDICAL PROGRESS.

THE RELATION OF MICRO-ORGANISMS TO TUBERCULOSIS.—MR. W. WATSON CHEYNE, in a report to the Association for the Advancement of Medicine by Research, holds that when the tubercle-bacilli reach the alveolus of a lung which is in a suitable condition for their growth, they develop in the epithelial cells lining the alveolus. This alveolus becomes filled with cells, neighboring alveoli become affected, and the same process goes on in them. The further result will depend on the number and growth of the bacilli, and on whether the patient is a good soil for their development. If they develop well, we have caseous pneumonia; if they grow slowly and with difficulty, we have fibroid phthisis. In the former case, the alveoli become early distended with epithelioid cells; inflammation of the walls of the alveoli ensues; the epithelioid cells soon undergo caseous degeneration; and the presence of the masses leads to atrophy and sloughing of the walls of the alveoli. Infection of neighboring parts of the lung occurs by continuity, and also by partial coughing up, and re-inhalation of the bacilli into other parts of the lung. In this rapid phthisis, fibrous formation around the alveoli only takes place imperfectly, and the lung rapidly breaks down.

In the case of fibroid phthisis, the bacilli are few, and grow only with difficulty. Thus fibrous formation occurs extensively, and giant-cells are entangled in this fibrous tissue. In parts, however, the process may be more rapid, and these cheesy masses are found, which may lead to breaking down of the lungs and the formation of cavities.—*British Medical Journal*, March 17, 1883.

THE ANTIPYRETIC ACTION OF KAIRIN.—At the meeting of the Berlin Medical Society, held February 21st, PROF. EWALD demonstrated some temperature curves, which proved the antipyretic action of kairin, as claimed by Filehne. In the case of a phthisical patient with chronic gastric disturbance the hourly administration of kairin in seven grain doses reduced the temperature below normal: when the administration of the drug was stopped, the temperature again was elevated above the normal, to be again reduced by the re-administration of the drug. GUTTMANN could also confirm this evidence as to the antipyretic action of kairin in the instance of a case of bilious pneumonia, where a similar result followed the administration of the drug.—*Deutsche Med. Woch.*, February 28, 1883.

THYMOL AS AN ANTIPYRETIC.—FIORI has made investigations on the action of thymol on the circulation of febrile and non-febrile patients with diseased or sound hearts (*Centralblatt f. klin. Med.*, No. 2). The points that received attention were the temperature, the pulse, the blood-pressure, and the respiration. Three to four grammes doses lowered the temperature and the frequency of pulse and respiration, without exercising any injurious action on the contractile power of the heart. The arterial blood-pressure, as measured by Basch's apparatus, was found to be invariably raised.—*Med. Times and Gaz.*, March 3, 1883.

AZOOSPERMIA IN HEALTH AND DISEASE.—A. BUSCH has examined the condition of the spermatozoa, in different ages, in the testicles, epididymis and the vasa deferentia, with the following results:

	SPERMATOZOA.			
	None.	Few.	Many.	Total.
Cases of sudden Death,	—	3	4	7
Acute Diseases,	2	3	9	14
Pulmonary Phthisis,	14	20	8	42
Chronic Diseases,	11	13	13	37
Total,	27	39	34	100

As causes of the absence of spermatozoa, Busch mentions faulty development of the testicles, local causes, general causes, and senile atrophy. The average weight of the testicle and epididymis is 14.3 grammes, while its relation to the general body weight is as 1: 1755.—*Central. f. d. Med. Wissen.*, February 24, 1883.

OPERATION FOR UMBILICAL HERNIA.—DR. DEJEAN, communicates an interesting case to the *Bulletin de Thérapeutique*, in which he performed an operation for an umbilical hernia, as large as a fist, which occurred in the person of a woman twenty-two years of age. Signs of strangulation had manifested themselves during five days, when the operation was performed, under Listerian precautions "as far as possible." The hernia, as usual in such cases, was found to consist of omentum and intestine, the former placed in front. The reduction of the intestine was accomplished, as recommended by Richer, by dilatation of the ring instead of by its incision, and the portion of the omentum which obstructed the reduction was removed. The wound healed readily; and on the twelfth day the patient was able to leave her bed.—*Med. Times and Gaz.*, March 3, 1883.

TWO CASES OF PERFORATION OF THE OESOPHAGUS.—KLAAR reports the following cases:

1. A woman, aged 32, swallowed a piece of bone, and an attempt was made to push it down into the stomach. Severe pain in left half of the chest resulted, and death occurred in a few days with symptoms of pneumothorax. The autopsy revealed a perforation of the oesophagus, with consecutive pleurisy and pneumothorax.

2. A man, aged 41, swallowed a small piece of wood which was enclosed in a sausage; the fragment remained in the oesophagus, and in fourteen days death resulted from severe hemorrhage from the mouth and anus. The autopsy showed that the splinter of wood had been arrested in the oesophagus at the level of the bifurcation of the trachea, and that one end had perforated the aorta.—*Centrab. f. d. Med. Wissen.*, February 24, 1883.

NEPHRECTOMY IN ITALY.—DR. SPADARO reports (*Gazzetta degli Ospitali*, February 18, 1883) that five operations for removal of the kidney have been performed in Italy: the first by Urbinati, of Cesena, the second by Raffa, of Rovigo, the third by Clementi, of Catania, the fourth by Novaro, of Turin, and the fifth by D'Antona, of Naples, the last three being successful. Prof. D'Antona's operation was performed December 20th, on a married lady, aged twenty-six, by a curvilinear incision in the left loin. Pus was found around the kidney, which was changed into a bag-containing matter. The artery and vein were secured in one ligature, the ureter in another, while a third ligature on the proximal side of the others included all those structures. Perchloride of iron was applied to the stump, and iodoform sprinkled into the wound, which, on the suggestion of Prof. Palasciamo, was not sutured. According to the last report (twenty-fifth day after operation), the wound was granulating rapidly, and the patient progressing to complete recovery.—*Lancet*, March 10, 1883.

DILATATIONS OF THE ABDOMINAL VEINS.—At a recent meeting of the Medical Society of Bonn, DR. LEO presented a man with immense enlargement of the veins of the abdominal walls, which had developed in the course of a few months. The enlargement commenced in the right groin and extended in two snake-like coils to the border of the ribs; on the left side, and in the middle line of the abdomen there was also a single strand of similarly enlarged veins. The affection suggested the well-known *caput Medusae*, although it did not surround the umbilicus; although the etiology is obscure, it is probable that the condition is caused by compression of the portal vein, though the liver is normal in size.—*Berliner klin. Woch.*, March 5, 1883.

ANEURISM OF THE ORBIT TREATED BY LIGATURE OF THE CAROTID.—In the *Vratch*, 1882, No. 13, there is a very interesting clinical lecture by Professor N. V. Sklifosovsky, of Moscow, on a case of idiopathic aneurism of the right orbit in a male non-syphilitic patient, aged 45, of moderately alcoholic habits, with chronic arteritis. All symptoms of the aneurism, viz., pulsating exophthalmos, oedema of the lids, dimness of vision, headache and earache, noise in the head, had been developed quite suddenly, no history of injury having been obtained. On examination of the patient about six weeks later, there were found, in addition to the above symptoms, total loss of vision, insensibility and opacity of the cornea, dilatation and immobility of the pupil, anaesthesia of the lids and right half of the forehead, complete immobility of the eyeball, pulsation on pressure of the latter, blowing noise (like that of a pair of slowly working bellows) heard over the right eyeball

and the corresponding temporal, parietal, and occipital regions, and disappearance of the subjective noises on compression of the right carotid at the level of the cricoid cartilage. The author diagnosed rupture of the atheromatous right internal carotid within the cavernous sinus, under the influence of some accidental increase of arterial tension. After the failure of seven days' treatment by compression of the carotid (ten minutes every hour), and low diet, the artery was tied at the level of the cricoid cartilage. Four weeks later the state of the patient was found satisfactory; the opacity of the cornea, the oedema of the lids, and the exophthalmos had disappeared almost completely; the eyeball became movable (abduction, however, was paretic); cutaneous sensibility was restored, and headache had ceased. The loss of vision, however, remained as entire as before the operation. Within five days after the ligature, there began to be developed a cataract of the right lens.—*London Medical Record*, March 15, 1883.

DRAINAGE OF THE ENTIRE MEDULLARY CAVITY.—BLECKWENN reports a case of chronic, diffuse osteomyelitis of the humerus in which resection of the head of the bone was performed, and drainage of its shaft accomplished by trephining the lower diaphysis and removal of the medulla. Recovery, with a useful arm resulted.—*Centrab. f. d. Med. Wissen.*, February 24, 1883.

TREATMENT OF HYDROCELE.—DR. MELILLO, of Rio de Janeiro, recommends (*Il Morgagni*, December) as an improved method of treating hydrocele the employment of a small syringe capable of holding ten grammes, graduated into ten equal parts, each capable of holding a gramme of a mixture of equal parts of chromic acid and water. After the puncture with the trocar has been made, and the liquid begins to flow out, the point of the syringe is immediately substituted for the trocar, before any more of the liquid escapes, and two grammes of the dilute chromic acid are slowly injected for every eight grammes calculated to exist in the tunica vaginalis. After five minutes the syringe is withdrawn, and nearly all the liquid allowed to escape, after which the canula is withdrawn. Any other irritant may be substituted for the chromic acid, and any sized syringe may be used; the object being only the securing the liquid of the hydrocele as a menstruum for the irritating substance employed.—*Med. Times and Gaz.*, March 3, 1883.

AUSCULTATION OF THE RESPIRATORY MURMUR IN THE ABDOMEN AS A MEANS OF DIAGNOSIS.—PROF. CANTANI claims that auscultation of the respiratory murmur over the abdomen will enable the separation of intestinal meteorism from pneumo-peritoneum. In the latter condition the respiratory murmur can be heard over the entire abdomen, while in the former it does not extend further than the region of the stomach.—*Centrab. f. d. Med. Wissen.*, February 24, 1883.

GASTRO-ENTEROSTOMY.—DR. FISCHER (*Deutsche Zeit. f. Chirurg.*, Bd. xvii. 5, 6), of Strasburg, describes the case of a woman, aged 31, who, a year before admission to hospital under his care, had been a patient of Professor Freund, who had removed the uterus for fibro-myomatous disease. She had all the symptoms of cancer of the pylorus, and Lücke decided upon attempting resection. The stomach was washed out for twelve consecutive days, and on the twelfth the abdominal cavity was opened, but the pylorus was found intimately adherent to the pancreas and other adjacent structures, so that resection could not be performed. The pylorus, was, therefore, simply laid open and

united to the abdominal wound, as in an ordinary gastrotomy. The operation was performed without spray, and the aperture in the abdominal wound that was united to the opening in the pylorus was dressed with iodoform and covered with thymol gauze. In thirty-seven days the patient was discharged. Since her dismissal from hospital she has been able to take light nourishing food, and remains free from any tendency to vomit.—*London Medical Record*, March 15, 1883.

THE VIRUS OF CHARBON.—At a recent meeting of the Société de Biologie, M. FRANCK read a note by MM. ARLOING, CORNEVIN, and THOMAS relative to the different modifications produced in the virus of charbon by various physical and chemical agents. The resistance of dried virus is very much greater than that of fresh virus, and its virulence in different cultures is not invariably associated with mobility of the bacteria; since, although the bacteria remain active, a solution to which eucalyptus has been added, becomes perfectly inoffensive. Putrefaction and cold are without effect on the microbes. On the other hand, a temperature of 80°, maintained for two hours, or of 100° for twenty minutes, destroys all signs of activity. The difference between dried and fresh virus is well seen in their behavior to different so-called antiseptics. Thus dried virus at 32°, even when containing spores, is uninfluenced by such liquids as camphorated or carbolated alcohol, oxygenated water, quicklime, borate of sodium, gaseous sulphurous acid, and the vapor of chloroform. The most active agents are corrosive sublimate, nitrate of silver, and carbolic acid; these destroy both fresh and dried virus, as is also the case with permanganate of potassium, chloral, and eucalyptus.—*Le Progrès Méd.*, February 24, 1883.

A RAPID TREATMENT OF ERYSIPELAS.—MR. RICHARD BARWELL reports five cases of erysipelas which he thinks are sufficient to show that a very great effect is produced upon erysipelas and its congeners by covering the surface with white lead paint. This effect is, he believes, entirely due to exclusion of air; the lead of that compound is in an insoluble condition; nor does he believe that the inflamed skin is in a state to absorb any material applied on its surface; by the time that it has recovered the lead is separated from the living tissue by a tolerably thick layer of desquamated and dead epidermis. Moreover, lead as a solution of the acetate has been applied from a very early period, and, as far as he knows, without any appreciable benefit to erysipelas.—*Lancet*, March 10, 1883.

THE NATURE OF SOFT CHANCRES.—DR. MORITZ WINTER believes that the so-called soft chancre originates from a modification of the syphilitic virus, but is then a separate disease, and can never serve as a source of pure syphilitic contagion.—*Medicinisch-Chirurg. Centralb.*, February 16, 1883.

EXTRA-PERITONEAL NEPHRECTOMY.—BRICHETTI, as the result of his studies and experiments, arrived at the following conclusions (*Gazz. degli Ospitali*, Sept. 3, 1882). 1. The system does not suffer from the sudden removal of one of the kidneys. 2. Nephrectomy (in dogs) has no great danger as an operative proceeding. 3. It is better to abandon the pedicle, previously applying two distinct ligatures with catgut, then to close the wound with the twisted suture, using long and strong pins. 4. The urine undergoes no alteration, chemically or microscopically. 5. Hypertrophy of the heart, which is especially found in atrophy of one kidney (Traube) is never met with. 6. The remaining kidney does not increase in weight or volume, but undergoes a fatty degeneration of the

canaliculi, with slight enlargement of the epithelium, noticeable three months after the operation, more evident after six months, and reaching the maximum after the twelfth month. Professors Tizoni and Pieuriti found in rabbits after nephrectomy an increase in weight and volume of the remaining kidney, and a reproduction of glomeruli and tubuli. This the author has not been able to confirm, though he thinks there might be an increase of glomeruli.—*London Medical Record*, March 15, 1883.

SPONTANEOUS RUPTURE OF THE GALL-BLADDER.—SAHLIN (*Hygiea*, 1882) relates the following case: Patient thirty-two years of age; mother of four children; has for years had a chronic catarrh of stomach, and complained of pain in right hypochondrium from time to time; she has never had biliary colic. One night, when six months advanced in pregnancy, she was seized with a sudden and violent pain in the abdomen. During the following days the abdomen enlarged and there was extreme tenderness in the right iliac fossa. On the twelfth day miscarriage occurred, and three days later she died without any appearance of jaundice. At the autopsy a large amount of bile was found in the peritoneal cavity; the gall-bladder contained five large calculi, and had ruptured through the anterior wall.—*Weekly Med. Rev.*, March 10, 1883.

ON A DIRECT COMMUNICATION BETWEEN THE PORTAL VEIN AND THE INFERIOR VENA CAVA.—M. CH. LABOURIN claims to have detected in man a direct communication, other than the capillaries, between the vena cava inferior and the portal vein.

THE TREATMENT OF EPILEPSY.—DR. PAUL BRICON (*Thèse de Paris*, 1882) has made a series of experiments at Bicêtre regarding the effect of certain therapeutic measures in the treatment of epilepsy. These measures were hydrotherapy, arsenic compounds, magnetism, and pilocarpine.

Among fifty-four epileptic patients to whom hydrotherapy was applied, ten were decidedly improved, seventeen slightly improved, the rest were not affected. Among seventeen of those improved, there was no other treatment.

The bromide of arsenic was used in ten centigramme doses, but with very poor result. Ten patients were treated with it, and only one was improved by it alone.

Daily applications of very large magnets were made upon sixteen patients. The applications were continued for from three to six months. No physiological or therapeutical effects were produced.

The nitrate and hydrochlorate of pilocarpine were tried, in .005 to .05 doses, upon fourteen patients. Seven were improved. Dr. Bricon thinks that only hydrotherapy and the salts of pilocarpine gave sufficiently good results to justify further trial.—*Journal of Nervous and Mental Disease*, January, 1883.

THE PREVENTION OF LACERATION OF THE FEMALE PERINEUM.—MR. ALEXANDER DUKE makes use of the following procedure to prevent rupture of the perineum in labor. When he finds the head fairly engaged in the pelvis, and advancing with each pain, he takes his seat by the patient's bedside, and having lubricated his left thumb, or the first two fingers of his right hand, he introduces either into the vagina, and at the onset of a pain, draws back the perineum firmly, but gently, towards the coccyx, relaxing the tension gradually as the pain lessens till the next ensues, and so on till he can draw back the perineum with very slight effort. He thus tires out the muscular structure, and produces sufficient relaxation for the head to pass.

In most cases so treated there is no danger to the

perineum, but when the pubic arch is narrow (which can be easily determined) he takes the additional precaution of raising the patient's left hip, and supporting it on a hard pillow, while the shoulders are kept low, fomenting the parts, using inunction of lard or vaselin, and taking particular care to direct the head forward by pressure, with his left hand below the coccyx, or a finger in the rectum, leaving the perineum untouched. It has always seemed anomalous to him that the perineum should be expected to dilate on such short notice, namely, "the process of extension," while dilatation of the os and cervix occupy such a considerable time, even with the additional help of nature's hydrostatic dilator, viz., the bag of waters.

The drawing back of the perineum produces no additional pain to the patient, as it is done during a uterine contraction; and he feels sure that, if nurses and students were educated as to the proper way of preparing the perineum previously to its distention with the presenting part, we should see and hear less of lacerated perineum.—*Brit. Medical Journal*, March 10, 1883.

THE EMPLOYMENT OF CHLOROFORM-WATER IN GASTRIC IRRITATION.—It is well known that washing out the stomach with alcoholic liquid is not without advantage in certain chronic affections of that organ, such as cancer, catarrh, and dilatation. DR. BIANCHI (*Lo Sperimentale*, November, 1882) employs chloroform-water in such cases with a view of preventing fermentation. In three cases, of cancer of the stomach, chronic catarrh with dilatation, and chronic gastritis, he introduced daily into the stomach a litre of chloroform-water and allowed it to remain for a minute or two. Instead of irritating still further the mucous membrane, as might be expected, the chloroform-water stimulated the secretion of gastric juice, and was without any toxic properties.—*Gaz. Hebdomadaire*, March 2, 1883.

THE TREATMENT OF SYPHILIS, BY INDIANS.—DR. J. MARION SIMS gives the following as the ingredients of a decoction used with great success by the Creek Indians in treating syphilis:

"Fluid extract of *Smilax sarsaparilla*, fluid extract of *Stillingia sylvatica* (queen's delight), fluid extract of *Lappa minor* (burdock), fluid extract of *Phytolacca decandra* (poke root), aa 3ij; tincture of *Xanthoxylum carolinianum* (prickly ash), 3j. Take a teaspoonful in water three times a day before meals, and gradually increase to tablespoonful doses.

"In making the fluid extracts, there is some risk of getting a remedy less efficient than the original Indian decoction, because the manufacturer may use roots that have been kept too long, and lost some of their active principles, while the decoction used on the plantations was always made of fresh roots just gathered from the woods. In making the fluid extracts, we should therefore be careful to have them made from roots recently gathered."—*British Medical Journal*, March 10, 1883.

HYSTERO-EPILEPSY IN MAN.—M. PARISOT has under treatment in the Hospital Saint-Charles, at Nancy, a young man, eighteen years of age, who is subject to convulsive crises ten times daily, each lasting about one hour. When the attack commences it is announced by pains in the neck and epigastrium, followed by falling and loss of consciousness. The first period is characterized by distortion of the face, convulsive movement of the eyes, and then general convulsions; passionate attitudes terminate the attack, during which there is no incontinence of urine, and the tongue is not bitten. M. Parisot discards the hypotheses of abscess

of the brain, epilepsy, or tetanus, as explanations of the convulsions, and thinks that the condition most resembles what is termed hystero-epilepsy in the female.—*Journ. de Méd. de Paris*, February 24, 1883.

SUCCESSFUL GASTROSTOMY FOR COMPLETE STRICTURE OF THE ŒSOPHAGUS.—DR. A. VENER describes in detail (*Medis. Obsr.*, March, 1882) the case of a man, aged 49, who was suffering from a cancerous obstruction of the œsophagus, the first symptoms of which had been observed about eighteen months before the operation. The patient was extremely emaciated, weighed 105 pounds, was not able to swallow solids, nor, of late, even fluids. The stricture was situated at the distance of 30 centimetres from the incisors. Gastrostomy, to which the sufferer readily consented, was performed by Dr. Knie, after the plan of Fenger and Howse, under the strictest antiseptic precautions (but without spray). The patient bore the operation excellently. The highest temperature (100.6°) was observed on the second day, after the first stage of the gastrostomy. On the seventh day the salicylic dressing was removed, and on the eighth the stomach was opened and a drainage-tube (provided with an Escher's obturator) introduced. On the nineteenth day the patient got up, and on the fortieth left the hospital, feeling quite comfortable and having considerably gained in weight. Drs. Vener and Knie emphatically insist on the necessity of performing gastrostomy in cases of cancerous stricture at as early a period as possible, before the patient's strength has been exhausted and the œsophagus has become absolutely impassable. [This is only the second successful case of establishing a gastric fistula known in the Russian literature. In the first (non-cancerous) the operation was performed by Dr. A. S. Satzenko, of Kieff. All the other Russian cases of gastrostomy (Professor Sklifosovsky's two, Drs. Snegireff, Anders, G. F. Tiling, Stukovenkoff, Kitaevsky) were followed by death within a few days after the operation. The longest survival (nineteen days) presents the second case of Professor Sklifosovsky (*Vralch*, 1880, No. 21, pp. 341-2). Save Dr. Anders' case, in which fatal peritonitis developed (*Peters. Med. Wochenschr.*, 1881, No. 21), all the patients died from exhaustion.]—*London Medical Record*, March 15, 1883.

SYPHILITIC DISEASE OF THE RETINAL ARTERIES.—HIRSCHBERG (*Centralb. f. prakt. Augenheilk.*, Nov. 1882) reports the case of a man, aged 39, who had two years earlier suffered from a venereal sore and an inguinal bubo, presented the following symptoms and appearances in his left eye: $V = \frac{15}{xxx}$; field normal; slight haze of the disk, and enlargement of the veins; an opacity in the vitreous about one millimetre in front of the papilla, like a delicate veil with a dozen reddish-brown dots scattered over it. Besides this, denser membranous opacities in the vitreous and a small hemorrhage over a cilio-retinal vessel, which took the place of the arteria temporalis inferior. Some three weeks later there were observable, in addition to opacities in the vitreous, well-marked white peri-vascular streaks surrounding the arteria nasalis inferior, from which delicate white lines passed perpendicularly into the retina on either side. More peripherally the affected artery plunged into a system of bluish spots, chiefly lying in the retina, but partly projecting into the vitreous, and it terminated in a branched arrangement of red lines covered with retinal hemorrhages. After treatment—mercurial inunction, etc.—the blood became absorbed, but the other appearances remained unaltered. The importance of this observation is somewhat lessened by the absence of demonstration of the presence of syphilis.—*Ophthal. Rev.*, March, 1883.

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SATURDAY, MARCH 31, 1883.

THE BACILLUS TUBERCULOSIS IN DIAGNOSIS AND PROGNOSIS.

THE latest observations on the tubercle bacillus being based on the acknowledged essential relation between it and tubercular disease, have had for their object the determination of its clinical and diagnostic value.

Thus PFEIFFER, of Wiesbaden (*Berliner klin. Wochenschr.*, January 15, 1883), in the recent study of a series of cases, divided them into four grades of severity, and from a quantity representing four or five drachms of sputum he made daily four preparations from each case, and when these happened to contain no bacilli he made a second set of four. He further indicated the number of bacilli in each preparation as, numerous, sparse, and absent. His results were as follows:

In the first or mildest grade the bacilli were numerous 4 times, sparse 14 times, absent 7 times; in the second, numerous 11 times, sparse 10 times, absent 4 times; in the third, numerous 13 times, sparse 10 times, absent 2 times; in the fourth or most serious grade, numerous 16 times, sparse 6 times, absent 3 times.

From this it will be seen that the number of bacilli in the sputum increased with the severity of the disease. The fourth case died a few days after the termination of the observation; the bacilli in his sputum were always "numerous." Only in one case, the mildest, were bacilli absent for three successive days, none being found in twenty-four consecutive preparations.

DR. FRANZ ZIEHL (*Deutsche Medicinische Wochenschrift*, January 31, 1883) found tubercle bacilli

in the sputum of 72 out of 73 cases in which the physical signs of phthisis were present; even in such cases in which the local objective condition is wanting can the diagnosis be sometimes confirmed; in one of this kind the method failed, where there could be no doubt as to the diagnosis, while in a couple of cases this demonstration turned the scale in the diagnosis.

On the other hand, in none of 34 non-tuberculous affections of the respiratory apparatus (including croupous pneumonia, acute bronchitis, chronic bronchitis, with and without emphysema, gangrene of the lungs, and putrid bronchitis), were the bacilli present, although many preparations were made from each case.

While Ziehl considers that, according to his methods of staining, amplification, and illumination, he finds the tubercle bacilli in sputum more frequently than others, he still admits that there may be cases in which this new aid to the diagnosis of tuberculosis may lead to error or fail of its purpose. Thus in cases of true tuberculosis the sputum investigated may be derived from the nasal passages or the mouth, and thus be naturally devoid of bacilli, while it still occasionally happens that there may be cases of undoubted tuberculosis in which the bacilli are absent from the sputum. In one case, for example, a patient in whose sputum even elastic tissue of the lung was found, and who died with the signs of a cavity five months after he came under observation, bacilli were never found; while in incipient phthisis, too, the quantity of expectoration is sometimes so trifling that it is difficult to obtain a true pulmonary sputum.

Ziehl cannot, therefore, on this account agree with Balmer and Fräntzel who say that, in cases of lung disease, where, notwithstanding repeated and careful observations, no tubercle bacilli can be demonstrated in the expectorations, tuberculosis cannot exist; nor in their assertion that in all cases of rapid phthisis the bacilli are abundant in the expectoration. Lichtheim and d'Espine confirm Ziehl in this respect.

On the other hand, we dare not infer from the presence of tubercle bacilli in sputum that tuberculosis necessarily exists. Since we must admit the curability of phthisis in rare instances, we must admit the possibility of elimination of the tubercle bacillus. Hence, it is not impossible that tubercle bacilli may enter the respiratory passages by inhalation and be removed by expectoration. And, although, no instances of this kind have as yet been noted, it does not do to admit the second proposition of Balmer and Fräntzel, that where tubercle bacilli are present in sputum, we must have to do with tuberculosis of the lungs. Contrary, also, to Balmer and Fräntzel, as well as Pfeiffer, we dare

not attribute to the number or stage of development of bacilli any weight in prognosis beyond that the bacilli are very often, though not always, abundant where cavities are present. So, too, the bacilli in the bronchi and cavities of phthisical patients can have nothing to do with tubercular processes in other parts of the body.

DR. THEODORE WILLIAMS, of London (*The Lancet*, February 24th), examined the sputum in 130 cases of lung disease. Out of 109 phthisical cases he detected the bacilli in 106, and in 21 cases other than phthisical, he did not find the bacillus in one. DR. HERON found the bacillus in 54 cases, in some of which the *physical signs were so slight that he would have hesitated to make the diagnosis without the aid of the bacillus.*

If such observations as these are correct, and there is a remarkable unanimity in the results, the bacillus tuberculosis is no longer a pathological curiosity, but it behooves every practitioner to examine the sputum from cases of lung disease which are of any duration. How many of us have been consulted in cases in which, without any suspicion whatever that the sickness was to be of more than a few days' duration, and have seen it drift into phthisis, or have, perhaps, been informed by a sudden copious hemorrhage that we have something more to deal with than a simple bronchitis.

THE BACILLUS TUBERCULOSIS AND THE ELASTIC TISSUE OF THE LUNG IN THE DIAGNOSIS OF TUBERCULOSIS.

It has long been known that one of the most positive aids in the diagnosis of phthisis is the elastic tissue of the lung as found in the sputum by aid of the microscope. In this manner fragments of considerable size derived from the disintegrated air vesicles are discovered with comparative ease—very much more easily and requiring much less manipulative skill than the bacillus tuberculosis as ordinarily sought for. Notwithstanding this fact, it is comparatively rare that sputum is studied, even by hospital physicians, with a view to finding it. It will be a matter of surprise, therefore, to some of our readers to learn that it is found in almost as large a proportion of instances as the bacillus, and is therefore practically as useful in the diagnosis of chronic phthisis. Drs. Dettweiler and Meissen (*Berliner klin. Wochenschr.*, Feb. 12) investigated eighty-seven cases of chronic phthisis in different stages. In eighty-five of these clinically diagnosed cases, or 97.7 per cent., bacilli in larger or smaller numbers were found in the sputum, while in eighty-two, or 93.8 per cent., elastic tissue of the lung was found.

In this connection it is interesting to know that Dr. Formad, of Philadelphia, has discovered that Fenwick's process of preparing sputum for exami-

nation for elastic tissue (boiling with liquor potassæ, setting aside to cool, and examining the sediment) serves also to prepare it for examination for bacilli, and in this manner both objects may be sought at the same time, and by a single manipulation.

MEDICAL PHILOLOGY.

THE state of medical terminology and pronunciation is, to say the least, most unfortunate. As in the days when there was no king in Israel, when every man did that which was right in his own eyes, so is it now. The student who has received a classical education has a sufficiently hard time of it, but woe be to him to whom Latin is a novelty and Greek an enigma. The English method of pronouncing Latin, which gives us "vagina" with its long *i* as in light, is followed by not a few, and even adherents of the Continental method (save the late dear old Charles D. Meigs) hardly dare to pronounce it with the *ee* sound. "Major" is almost always sounded with the *a* as in hate, even when combined with "pectoralis" with its *a* as in far, thus commingling the two systems. And now, still further to confuse us, comes the Roman method, with its hard *c*, and its "hydrocephalus" in medicine, and its "keramic" in art.

Still worse, quantity seems to be often wholly forgotten. The followers of all three systems shorten the penultimate of "umbilicus" instead of making it long, and transform "parësis" into "parësis," and "tinnitus" into "tinnîtus." Not without reason, then, does Virchow enter a protest, in a late number of his *Archiv*, against the "Barbarisms of Medical Language."

As systems of pronunciation are blended, it is no wonder that even the two ancient tongues themselves are joined in unseemly wedlock. We know one of our best medical authors who has repeatedly written "subdermal," which is no less a monster of language than "hyperextension" and its similars, to which our Berlin linguist objects, Celsus and other Roman authors, though they adopted many Greek terminations from their Grecian masters in our science, and thus unfortunately led the way to such anomalies, always printed the Greek terminations with Greek letters to denote their foreign origin.

Not only have genders suffered strange transformations, but the very forms of words have undergone extraordinary changes. The old Greek "kynanche" and its later "synanche," through the Latin and Italian, became "squinantia," and in English quinsy, as in German Propst (English provost) is derived from præpositus and Pferd from paraverêdus. This same tendency to abbreviation is giving us "ary-" instead of "aryteno-epiglottidean," and other equally bad, though handy, terms.

Nearly every page of our medical journals presents us with the illegitimate "diagnose" for "diagnoscite," and in adjectives a similar forgetfulness of the proper root form is giving us many unjustifiable terms. "Hypodermic" is almost an established word, although the proper form is "hypodermatic;" and "tabetic" is derived from an impossible "tabeticus," in spite of the fact that the genitive of tabes is tabis, and its adjective "tabidus."

So, too, the Greek termination "ides" is made to assume a Latin form, "ideus," and its corresponding feminine as in "mastoides," both in describing the process which is, and its muscle which is not, "teat-like;" or in "arachnoidea," to denote the membrane which is, and its vessels which are not, "like a spider's web."

An international science like medicine, deriving most of its technical terms chiefly from two ancient languages, and adding to them by the coinage of new terms by authors who write in all the modern tongues, and who are often sadly deficient in classical culture, is necessarily at the mercy of ignorance and carelessness. We bespeak, therefore, from our teachers, and especially our educated authors, more care and exactness in the use of language. He who mispronounces a word is guilty of philological murder, and he who joins Latin and Greek is the author of a linguistic miscegenation.

We trust eventually to see a science of literary orthopædy arise in medicine, the province of which shall be to correct the deformities of speech, deformities which are as obnoxious to the ear of the scholar as is a clubfoot or a knock-knee to the eye of the surgeon.

CHEMICAL TREATMENT OF SEWAGE—THE PETRI SYSTEM.

FOR over two years this system has been in use experimentally at the Plotzensee prison near Berlin, which aggregates a population of about two thousand persons. Filtration through turf, gravel, and sand, with precipitation by lime, sedimentation, and subsequent filtration, form the steps of the new process. The turf acts, of course, mechanically, but it is claimed that it also exercises a chemical action, causing the destruction of dissolved organic matters, the retention of ammonia, and the preservation, by an antiseptic property, of substances prone to decomposition which may have been retained by it. The sand and gravel are simply filtering agents. The lime precipitates much of the organic matter, such as the acids which take their origin in the fermentation of the sewage, and especially combines with the carbonic acid present, carrying down in a sedimenting basin during its precipitation all the mechanically suspended matters of the sewage. The turf is understood to last a

long time without deteriorating in its chemical qualities, or choking in its pores.

The city government of Berlin has recently instituted an investigation into the working of this system with the view of applying it to the general sewage outlets of the city. The sewage has been examined by chemical means before and after its purification—and the effluent liquor has been compared with certain river and well waters, and with the effluents of certain farms where sewage irrigation is carried on, the results being understood to be extremely favorable to the new process.

The purified sewage is considered qualified for admission into any water-course in the country, provided the process is carried on under judicious and watchful supervision. In addition to the chemical proof of the quality of the purified sewage liquid, it was shown capable of sustaining vegetable and animal life notwithstanding the chemical treatment, by lime, which it had undergone. Certain chlorophylleaceous algæ flourished in it and fishes thrived. The value of the sludge as a manure is also adverted to, as is usual in the history of a new chemical process for the purification of sewage, the said sludge containing so much nitrogen and so much phosphorus.

But so many chemical methods have been introduced, with reports showing their ability to deal satisfactorily with the two difficult questions, the disposition of sewage and the pollution of rivers, and have failed when applied on the large scale, that we must hesitate before accepting the Petri process as presented by their chemist to the city authorities of Berlin.

SYSTEMATIC POST-MORTEMS.

It is a matter of no little surprise, when we once have our attention directed to the subject, that so many valuable, and in many cases indispensable, data are entirely omitted from even the best of our reports of autopsies. Who of us give the weight and volume of the various viscera, the length of the large or the small intestine, or the circumference of the principal arteries?

Following the lead of the anthropologists, and especially in this country of Dr. Bowditch and the Massachusetts Medico-Legal Society, the Surgeon-General, U. S. A., has issued a circular of instructions, directing that these facts and figures shall be included in army reports of autopsies, besides the ordinary facts of the medical histories. It is a step in the right direction, *i. e.*, the substitution of precision for a guess; and when a sufficient number of facts are gathered, we can establish a norm as to all these organs. Sufficiently detailed instructions are given as to the precautions to be adopted and the methods of making the observations.

The government services are so favorable to all such exact scientific observations, that we should be very glad if the Medical Corps of the Navy and that of the Marine-Hospital Service would adopt a similar form. True, so full a record requires time and trouble, but what is worth having that does not?

DIVORCE.

In the *North American Review* for April, 1883, Judge Jameson closes an article full of startling disclosures, with some excellent suggestions. The increase in the number of divorces in this country, and especially in New England, is one of the most serious of the social problems affecting the population. In Massachusetts, in 1878, there was one divorce to every 21.4 marriages; in Vermont, one to 14; in the Western reserve, one to 11.8; and in one of its counties, one to 7.4.

Judge Jameson points out that the law, thus far, has only considered the interests of the husband and the wife, and has neglected to make any provision for the representation of the other two and very deeply interested parties, viz., the children and the State. He proposes that a guardian *ad litem* be appointed for the children, who should be heard in their interest, and be paid by the complainant; and that the State should be represented by its attorney. In addition, he advocates a Federal statute on the whole subject of marriage and divorce to make it uniform all over the country. Coming from one who is evidently of very "liberal" views on the subject, these opinions carry all the more weight, and should receive earnest consideration.

THE NEW YORK COUNTY MEDICAL SOCIETY AND THE NEW CODE.

A LARGE and spirited meeting of the Medical Society of the County of New York was held last Tuesday evening, to elect three delegates to the State Medical Society, to fill the vacancies created by the resignations of Drs. Webster, Johnson, and Foster, who had been elected permanent members. The meeting was crowded with members who were present to give expression, through the election, to their views on the New Code.

Dr. Austin Flint, Jr., nominated Drs. Charles Hitchcock, C. S. Ward, and C. A. Leale, to fill the vacancies created by the resignations; and stated that these gentlemen were earnest advocates of the Old Code, and in the State Society would vote for its restoration. Dr. D. B. St. John Roosa nominated Drs. Walter R. Gillette, P. Albert Morrow, and F. M. Weld, who were announced to be supporters of the New Code. The ballot resulted in 94 votes for the Old Code ticket, nominated by Dr.

Austin Flint, Jr., against 71 for the New Code supporters, nominated by Dr. D. B. St. John Roosa.

This important action in the home of the New Code is significant, and indicates that the profession is aroused to the importance of the issues involved. By the election of these three gentlemen, the delegation of the New York County Society no longer remains solid, and we trust that the influence of an aroused professional sentiment may make itself felt still further in this matter.

MYOSURIC URINE.

UNDER the above title M. Denancey describes a kind of urine which must have attracted the attention of those of our readers accustomed to make urinary examinations.

The following are the physical characteristics of such urine: It has a strongly reddish-yellow color; has a specific gravity which oscillates between 1025 and 1029; does not contain any sugar; is but slightly acid; blackens silver vessels in which it is boiled, and is colored brownish by the cupro-potassic test. He finds, further, that it has the property of decolorizing iodide of starch, which is due to the unoxidized sulphur in the large quantity of extractive contained in it. M. Denancey thinks that this condition of the urine is a pathological state related to diabetes, and he therefore proposes to name it *myosuric diabetes*.

PART III. of the surgical volume of the *Medical and Surgical History of the War of the Rebellion* has just been issued from the Surgeon-General's Office. It is a portly volume of one thousand quarto pages, and completes the surgical portion of the history. The work on this volume, which was interrupted by the untimely death of the late Surgeon George A. Otis, has been ably carried on to completion by Surgeon D. L. Huntington, and it covers the following subjects: The treatment of regional injuries of gunshot origin, and those of the lower extremities; miscellaneous injuries, not strictly gunshot in character, but incident to the military status; wounds and complications, including the nature, peculiarities, and effects of missiles and projectiles, and conditions affecting the course and result of wounds, with especial reference to the graver complications of secondary hemorrhage, erysipelas, pyæmia, gangrene, and tetanus; anæsthetics, and a brief historical sketch of the medical staff, and a description of the *materia chirurgica*, and of the methods of field, railway, and water transportation of the wounded. The volume is profusely illustrated, and sustains the high reputation which is enjoyed by its predecessors of the series. Of the work in detail, we shall have more to say hereafter.

OUR readers will learn with deep regret of the death of Dr. William H. Van Buren, which sad event occurred last Sunday morning. Dr. Van Buren was an eminent surgeon, and a distinguished citizen, and his death is a profound loss to the profession of which he was a most esteemed member. Of his life and labors, a brief sketch will be found in another column.

REVIEWS.

COLOR-BLINDNESS: ITS DANGERS AND ITS DETECTION. By B. JOY JEFFRIES, A.M., M.D., Ophthalmic Surgeon to the Massachusetts Charitable Eye and Ear Infirmary, Carney Hospital and New England Hospital for Women and Children, etc. etc. Revised and enlarged edition. 12mo. pp. 334. Boston: Houghton, Mifflin & Co., 1883.

THIS work was first published in 1880, and the demand now for a second edition shows that it has been well received. It has an established position as a standard text-book on the subject of which it treats; in fact, it is the only one in the English language, and its possession is therefore a necessity to all who wish to be up to the times in this branch of ophthalmic surgery.

The new matter in the present edition comprises the statistics of recent examinations for color-blindness, both in this country and abroad, the law passed by the Massachusetts Legislature in 1881, for the examination of railroad employes, and that which went into force in Sweden in January of the present year. Also the Congressional bill for the appointment of delegates to the proposed international convention to establish regulations for the control of color-blindness on the sea, which has been twice favorably reported by the Naval Committee, to which it was referred, but has not yet been acted upon by the House.

Eighteen pages have also been added to the already voluminous bibliography. Of the type, paper, etc., it is enough to say that it comes from the Riverside Press, and is equal to that of the first edition.

THE COMPEND OF ANATOMY. By JOHN B. ROBERTS, A.M., M.D. Third edition. 12mo. pp. 198. Philadelphia: C. C. Roberts & Co., 1882.

THIS excellent little compend has reached its third edition in less than as many years. Within its sphere, it is one of the most useful books of its class, and each edition has witnessed some slight improvement. We could, however, wish for a few more definite articles, especially in the table of contents, even though the process of compression had necessitated a rather abrupt style.

SOCIETY PROCEEDINGS.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, March 7, 1883.

EDWARD HARSTHORNE, M.D., IN THE CHAIR.

DR. GEORGE HAMILTON read a paper entitled

SEWER GAS, AND ITS ALLEGED CAUSATION OF
TYPHOID FEVER,

in which he said that, in his country practice, he had nearly always found that the young men who were at work in the fields were more frequently attacked with

typhoid fever than the females, who were generally engaged in domestic duties in or about the house; and if, as the sanitarians declare, "there is in the country houses, or the surroundings, something equivalent to sewer gas," why is it that the reverse, as to sex, should not be the case? Diphtheria is also said to be caused in great measure by sewer gas; why is it, then, that the most violent and fatal attacks of this malady occur in the country, sweeping off at times four, five, or six children, in a single family, without a thought of sewer gas; whilst in cities, with sewer gas almost everywhere, the proportionate mortality is much less. Notwithstanding the testimony of Dr. Alfred Carpenter, of London, to show the causation of scarlatina by this agent, here again such testimony is confronted by facts similar to those adduced in regard to diphtheria. It is only a few months since scarlet fever appeared in a town in Pennsylvania, noted for its cleanliness, and occasioned a proportionate degree of mortality unknown in Philadelphia.

It is now time to confront the popular opinion, he contended, that typhoid fever, diphtheria, and scarlet fever are caused by sewer gas, and that to a degree unequalled by all other alleged causes combined. In attempting to do this, such cases as the following will be completely ignored. Mr. A., on returning from his summer tour, perceived, distinctly, the smell of sewer gas in his house, and fell sick on the third day with typhoid fever. What can be said against sewer gas in this case, it may be asked. In answer, it may be said that while, by a bare possibility, the gas was the cause of the disease, the probabilities are all the other way. In the first place, the period of incubation is from eight to twelve days; in the second place, his experience has convinced him that in not more than one house out of five has any smell or sign of sewer gas been detected, either before or during an attack of typhoid fever. And again, if the opinion lately advanced by a few of the most eminent authorities that, as at present constructed and placed within the dwelling, the apparatus is incapable of excluding the gas, is correct, then, in such a city as Philadelphia or New York, many thousands more must be added to the tens of thousands of houses said long ago by the alarmists to be infected with sewer gas. In this connection, it may further be stated, that if the dwellings of this city and those of New York are infected to the extent asserted, then the conclusion is inevitable that the mortality would be absolutely frightful, and yet, in some weeks, in our city and in New York, with, taken together, about three millions of people, the deaths have been down to two, three, or four; while diphtheria caused, as sanitarians and experienced physicians say, by the same sewer gas, has at this identical time occasioned weekly, the death of about thirty or forty persons. In the third place, it is well known that many individuals on returning from the country to their homes in the city, in a very few days, before the period of incubation has expired, have had attacks of typhoid fever, and such cases may fairly be regarded as having had their origin in the country.

An important point in the history of typhoid fever, as it occurred in the country, was, that if the disease once appeared in a farm-house, it would, as a rule, attack more than one of the members of the family before leaving it, and this, too, when the physician knew of no other case within a mile or more of the afflicted family. Now this is in entire accord with the admitted contagiousness, under certain conditions, of typhoid fever. The feature just noticed does not, as a rule, occur in the city, for in an immense majority of cases there will be but one member of a family attacked. Now it has been said by a somewhat noted medical statistician, and concurred in by many others, that if a

case of typhoid fever appears in a family, it proves the existence of gas or filth in immediate relation with the residence. This is certainly explicit; but the question is, how happens it that, with such an efficient cause for the first case, it is only occasionally followed by others in the family? But, again, it may be asked, if sewer gas, for this, after all, appears to be the great "*cheval de bataille*," has not been, and is not yet excluded, by even the best plumbing, from the finest houses in this city or in New York, and, consequently, that tens of thousands of houses in both cities are in this fearfully exposed condition, how comes it that in Philadelphia, with 900,000 inhabitants, the Board of Health has recently reported but two deaths from typhoid fever in one week, and four in another; whilst diphtheria, said to be due to the same agencies, has prevailed at the same time to an alarming extent? The returns of the Board of Health of New York present similar statistics, showing comparatively fewer deaths from typhoid fever than Philadelphia, but a larger proportionate fatality from diphtheria and scarlet fever. That many physicians neglect to carefully examine these reports is well known, and yet they are the only available and reliable sources of information in regard to the character and movement of disease. If, instead of this reprehensible neglect, a diligent and discriminating examination were regularly made, it would do much to prevent misconception and error in regard to the actual causation of disease, a subject admitted by the most experienced and gifted minds to be one of equal difficulty and importance.

In this connection it must be stated that the reports of the Board of Health of Philadelphia show, unmistakably, that in the central portions of the city, where sewers and water-closets are most numerous, there is, as a rule, less typhoid fever and diphtheria than upon the outskirts, adjacent to the country; and this was the fact in regard to bilious remittent fever, before it gave place to typhoid. Neither is it matter of surprise, for, just in proportion as the streets have been extended into the suburbs, graded and paved, houses erected thereon, and sewers constructed to carry off the surface drainage, a diminution of fever, whether intermittent, remittent, or typhoid, has been the beneficial result of such improvements.

COL. WARING, who was present by invitation, was called upon by the Chair to discuss the subject considered in the paper.

He remarked that he desired to say one word for sanitary engineers with regard to the cause of typhoid fever, and this was, that they had long since abandoned the opinion that sewer gas was the cause of the disease. He thought it very important that filth should be gotten out of the way so as not to become a source of contamination to the water-supply. The literature of the subject seems to prove that typhoid fever in the country is due to drinking water which has become contaminated. Cleanliness is safe and important, and efforts should be always made to secure it.

DR. HAMILTON said the quality of the drinking water remained essentially the same from year to year, whether typhoid fever prevailed extensively, or was absent. So, also, in regard to vegetables and roots for family use. These are laid up every season, generally in trenches, covered with clean straw and earthed over. On consulting several German monographs Dr. H. had found the experience of the writers to conform with his own, that males suffered more from typhoid fever than females, and that from the fifteenth to the twenty-first year, the period of rapid growth, the danger, in case of an attack, was augmented.

DR. J. M. KEATING said that the paper just read might mislead some into the supposition that *sewer gas* was considered a cause of typhoid fever. It may be

well for us at once to dispel such an idea, and to couple with the paper just heard the emphatic endorsement of this body that *sewer gas*, as far as *typhoid fever* is concerned, is simply a *VEHICLE* by which the specific germ may enter the system of one prepared to nourish and develop it. There is no need to debate the question as to the greater importance of infected drinking water; the incidents in the paper just heard, the greater prevalence of the disease in the rural districts where privy wells contaminate the drinking water, and the remarkable statistics of the New England country towns where the wells for sewerage and drinking purposes are under one roof, the fact that these localized epidemics are usually traceable to one primary case entering the village, are all sufficient evidence in themselves.

But though *sewer gas* may not always carry the germs of typhoid fever, it has a poison of its own equally terrible in its consequences.

The modern improvements in house-drainage are unfortunately too often the means of carrying the most deadly vapors directly into the abodes of luxury and wealth. At those hours when depressing influences have disarmed their victim, these noxious gases steal insidiously into his chamber, and do such violence as to render fatal by the most serious complications such diseases as are otherwise mild and harmless in themselves. Whether the concentrated miasms from paludal emanations or the outpouring gases from a sewer through *siphoned* traps, the unconscious sleeper breathes poisons as potent in their devitalizing effects as if he inhaled the germs of typhoid fever in their purity or drank water impregnated with the excreta of typhoid cases. *Sewer gas* is not necessarily a *cause* of typhoid fever, except when it carries its germ, but it is the most potent cause of the "typhoid state;" and there is a decided choice between these two evils—in favor of the former.

Early manhood carries with it a decided predisposition to typhoid fever.

The typhoid germ is certainly more deadly if its vehicle be poisonous also; and it becomes our duty to add an earnest appeal to that which seeks by proper legislation to give us pure air for our children to breathe, and pure uncontaminated water to drink.

DR. J. G. RICHARDSON remarked that Dr. H.'s illustrative cases may be very plausibly explained in accordance with the modern views respecting the danger to human health from impure drinking water, foul sewer air, and other grave sanitary errors.

Dr. Hamilton mentioned the case of the mother of a family who contracted typhoid fever away from home, and brought it back to her farm house, where several members of the family seemed to take the disease from her, and argued that this circumstance proved that the infection of typhoid fever was not carried by sewer gas, because in this instance no sewers existed near the place. The true explanation of this seeming anomaly is, he believes, however, that, whilst typhoid fever is sometimes carried by sewer gas, it is more frequently conveyed in drinking water contaminated by sewage, and that in this case the diarrhoeal discharges of the mother were emptied near enough to the family well to soak through the ground into it, and, by polluting the drinking fluid, transmit the disease to other members of the household.

That some such mode of propagation may have existed is shown by a remarkable fact related by Prof. Flint, upon whom Dr. Hamilton relies as an authority against the dangers of sewer gas, which is briefly as follows: A young man travelling by stage-coach in Vermont was taken sick, and left at a wayside inn in a small village. His complaint soon proved to be typhoid fever, and in a short time the disease appeared

in each of the neighboring houses, the inhabitants of which used water from the tavern-keeper's well, *except one*, whose residents had quarrelled with the landlord, and consequently went elsewhere for their water-supply.

In the light of recent sanitary science, then, it appears that many people, many whole families, in rural districts, suffer from typhoid fever because they drink well water polluted by direct mixture with fecal matter containing the specific fever germ, which soaks through the soil, often directly into the well; whilst in cities a few persons, relatively, are attacked with typhoid fever, and many with diphtheria, etc., by inhaling poisoned sewer air from stationary washstands and other modern conveniences. There are probably one hundred thousand village and farm houses in the United States today where the cesspools *feed* the wells in this abominable manner, and such wells surely in their turn *feed* from time to time the churchyards in their neighborhood.

Again, Dr. Hamilton inquired, why is it, if sewer gas is the cause of both typhoid fever and diphtheria, we now have, according to the late reports of the Board of Health, only two or three deaths per week from the former disease, and thirty or forty from the latter? The obvious answer is that sewer gas can only convey the *materies morbi* (the disease germ as I believe it is) with which it is freighted, and, at the present time, sewer air in but few houses is contaminated with typhoid-fever poison, whilst in many it is loaded with diphtheria germs. Precisely as drinking water might contain both lead and copper in varying proportions, and accordingly as one or the other temporarily predominated, would persons who imbibed the fluid be liable to exhibit the symptoms of lead palsy or of copper poisoning.

Although he is not yet prepared to endorse the *dictum* of a late English hygienist, who declares "For every death from typhoid fever, somebody" (meaning some plumber, architect, or sanitary engineer) "ought to be *hung*," he does hope and believe that the time is not far distant when at least the charge of criminal negligence will lie at the door of every physician who, after being warned by the occurrence of one case of typhoid fever, diphtheria, etc., in a dwelling, does not immediately endeavor to guard the other residents of that house against the germs (or poison) of infectious disease, by a diligent search for the sanitary defects in water or milk supply, or in the disposal of sewage, which will almost certainly be discovered.

After having spoken of the germs of typhoid fever, diphtheria, etc., entering sleeping apartments from stationary washstands in spite of traps, he said that in this connection he desired to show, just how, as he conceived, these poisons may penetrate through such mechanical contrivances. He then exhibited the ball of an ordinary Bower trap, covered with a coat of fungous growth, and a portion of the slimy coating from one of the pipes of similar structure. Since these form a continuous lining quite through the trap, it is obvious, he thinks, that it may have crept up from the sewer itself, thus forming on the inner or house side of the trap a new starting-point for the evolution of disease germs, against which of course the most perfect water seal is absolutely no protection. This, he believes, is what really occurs in a multitude of instances, as he pointed out in a paper entitled *Why Sewer Traps are Unreliable* in THE MEDICAL NEWS, Sept. 2, 1882. The true remedy for the dangers of sewer gas poisoning is, therefore, as explained in that article, to be found in sterilizing the whole interior of our traps and waste-pipes with slow currents or drippings of powerful disinfectants, such as the salts of iron, zinc, mercury, or arsenic, "just as the shores of the Dead Sea and the banks of certain small streams are sterilized, by mineral ingre-

dients or poisonous metallic substances from manufacturing refuse, with which their waters are mingled."

THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, March 8, 1883.

THE PRESIDENT, JAMES TYSON, M.D., IN THE CHAIR.

DR. J. T. ESKRIDGE exhibited a

UNIQUE SPECIMEN OF OSSIFICATION AT THE AORTIC ORIFICE,

which was sent him from a distance, and consisted of about one inch of the cardiac end of the thoracic aorta, the aortic semilunar valves, and the immediate portion of the heart. The specimen was removed from a man, aged about seventy, who had suffered a number of years from severe heart-disease. The walls of the large arteries were thickened, rigid, and contained numerous deposits of inorganic matter. The left ventricle was enormously enlarged. He was unable to obtain any information with regard to the condition of the cardiac valves other than those of the aortic orifice.

Description of the specimen—The aorta, where it surrounds the valves, for about half an inch in extent is a hard, unyielding substance of fibrous tissue, and calcified and ossified matter. The valves in several places are about one-fourth of an inch thick, and seem to have been almost entirely transformed into bone-like material. They are rigid and immovable, and have almost completely cut off all communication between the heart and aorta. One of the leaflets, about three-fourths of an inch in all directions with its vegetations, stretches across the aorta, lies against and is apparently adherent to the other segments of the valves, the latter being curled upon themselves. The central portion of the aorta is entirely occluded, and only two small openings through which the blood could have escaped from the left ventricle, are seen between the valvular leaflets near their peripheral attachments. The larger of these holes admits a flattened probe three mm. wide by one thick; the smaller is about two-thirds as large. Three other smaller orifices have existed, but these were obliterated before death by a thin, fibrous, transparent membrane, which is still seen. The valves on the cardiac side are tolerably smooth, but on the aortic side they are very rough, one of the leaflets supporting a vegetation ten mm. long. One of the segments of the valves is adherent to the inner coat of the aorta for about half an inch in extent, the free end of the valve being folded upon itself, and pointing towards the nearly closed aortic orifice. After macerating the specimen in water for forty-eight hours, the diseased valves still remain inflexible.

DRS. FORMAD, DUNN, GRIFFITH, and EDWARDS reported having seen similar, or nearly similar cases.

DRS. TYSON and NANCREDE called in question the correctness of calling the disease *ossification* of the valves, as it was in reality a *calcification*.

DR. SHAKESPEARE concurred in this view, and thought that ossification rarely, if ever, occurred in this situation.

DR. ESKRIDGE said that Hayden (*Diseases of the Heart and Aorta*, vol. ii. p. 839) referred to bony deposits in the aorta and its valves, as follows: Sir Dominic Corrigan exhibited before the Pathological Society of Dublin (see *Proceedings*, vol. ii., new series, February, 1864) the heart of a young woman, in which the root of the aorta had undergone complete osteoid transformation; it was likewise greatly dilated, and the aortic valves had been rendered thereby inadequate. During the patient's last illness, a systolic murmur, of metallic quality, appropriately designated a "trumpet-

bruit," was audible at the base, and in the ascending aorta and carotid arteries; there was likewise a soft diastolic murmur. He regards a "trumpet-bruit" as absolutely diagnostic of bony deposit in the aorta, either in the form of a "rim of bone," or a "projection or tongue of bone." In the same paragraph Corrigan refers to Dr. Bank's specimen of "a tongue of bone" projecting into the aortic orifice.

Dr. NANCREDE exhibited

A TUMOR COMPOSED OF MILIARY TUBERCLES OF THE SUBCUTANEOUS ADIPOSE TISSUE CONNECTED WITH ONE OF THE ANTERIOR CUTANEOUS BRANCHES OF THE LUMBAR NERVES.

The patient from whom this unique tumor was removed was a young girl, eighteen years of age, who for four years past had had occasional coughs, with at times some bloody expectoration; but was able to attend to her occupation of housework; her family history was not characteristic in any way. About one year since, she thought that she "strained herself," since when she has been subject to severe attacks of abdominal pain, which extends to various portions of her body. She was admitted to the female medical wards of the Episcopal Hospital last fall, when dullness on percussion and harsh respiration at the apex of one of the lungs was detected. During December, 1882, the pains increased, and the right thigh became flexed upon the abdomen. A small, exquisitely sensitive, nodulated tumor was now detected just to the outer side of the right rectus abdominis. Dr. Morris J. Lewis, by whose kindness he was enabled to present this specimen, then asked him to see the case with him. Under ether, he found a nodulated mass, beneath but attached to the skin, and freely movable upon the deeper parts. He then thought that the growth was one of the ordinary so-called neuromata, *i. e.*, usually fibrous growths in connection with some nerve, and that the pains were reflex, as was also the flexion of the thigh. February 20, 1883, he accordingly removed the growth, which to his surprise was markedly infiltrated, and only at one spot in any sense encapsulated, where it evidently had developed around a small cutaneous nerve and artery. The wound did badly and has left an indolent ulcer, but *all the reflex pains, and flexion of the thigh have disappeared*; and, while the lung is breaking down, nevertheless the patient is gaining flesh, and looks and expresses herself as much better, and thoroughly satisfied with the results of the operation. Dr. Nancrede termed this growth "unique," because he believes that none such has been reported, *i. e.*, subcutaneous masses of tubercle large enough to require the surgeon's knife, and liable to be mistaken for other neoplasms. The present growth was about an inch in its various diameters, as far as could be estimated. Microscopically, sections show fibrous and adenoid tissue, with giant-cells, according to the kind report of Prof. Simes, whose observations have been confirmed by Dr. Formad, and other pathologists, as well as by himself.

Dr. G. G. DAVIS said that he had seen a somewhat similar case in the clinic of Prof. König, of Göttingen. A young man had a subcutaneous tumor just above and to the outer side of the patella. It was about one inch and a quarter in diameter, and perfectly circumscribed. It and a portion of the joint-capsule, including the part to which it was attached, were excised antiseptically. On the synovial membrane were found a number of what appeared to be miliary tubercles. There were no other evidences of tubercular disease, and he recovered with a good, movable joint. Prof. König regarded the case as one of true localized tuberculosis. He examined the excised portion microscopic-

ally. The tumor was hard, but had undergone cheesy degeneration.

Dr. NANCREDE thought that this interesting case related by Dr. Davis still left his own unique, as Prof. König's case evidently had its origin from the synovial membrane, which was so closely related to the other serous membranes, which, as is well known, are so very prone to miliary tuberculosis.

CORRESPONDENCE.

SUDDEN DEAFNESS FROM MUMPS.

To the Editor of THE MEDICAL NEWS.

SIR: In the interesting article by Dr. George C. Harlan, on this subject, in the last number of your Journal, he states "it is only recently the clinical histories of a few such cases have been reported." In 1874 I published in *The American Journal of the Medical Sciences*, vol. lxviii, page 377, an article on disease of the internal ear, in which I gave a detailed account of two cases of sudden deafness from mumps, and I also made some remarks on the cause of the affection.

Since this report seems to have been ignored by the recent writers upon this subject, I have compiled all my cases of this kind, including of course those just alluded to. They will appear in the next number of the *Archives of Otology*, soon to be issued.

I am sir, very respectfully, etc.,

D. B. ST. JOHN ROOSA.

New York, 24th March, 1883.

A TOOTH AT BIRTH.

To the Editor of THE MEDICAL NEWS.

SIR: Yesterday I drew a tooth for an infant seven-teen days old. The child was a female, one-quarter Sioux. When it came into the world it had this tooth, a lower central incisor, developed as now presented.

The crown and body of the tooth seemed fully developed, and as large as the usual milk tooth. The attachment to the gum, instead of a root, appeared to be a mere fleshy connection, and hence not very solidly implanted. Moreover, it gave the child great uneasiness in nursing. The tongue in moving over the sharp surface presented by the tooth, in every attempt at drawing milk from the breast, became abraded, and finally ulcerated. As soon as the tooth was extracted, the child took the breast with avidity. The pain caused by nursing had undoubtedly interfered with the child getting a sufficient amount of nourishment.

I thought this case sufficiently unique to justify at least a brief reference to it.

Yours, etc.,

FORDYCE GRINNELL,

PHYSICIAN TO PINE RIDGE AGENCY, DAKOTA.

PERIOD OF STUDY REQUISITE TO ENTER THE ARMY MEDICAL DEPARTMENT.

To the Editor of THE MEDICAL NEWS.

SIR: Dr. Harvey L. Byrd, of the Baltimore Medical College, in his letter published in THE MEDICAL NEWS of March 10th, makes this statement: "It has long been the custom of the United States Army and Navy Medical Examining Boards to pass those *only* who are qualified to enter the medical service of our common country, without regard to period of study, or whether they are M.D.'s or not."

Dr. Byrd is evidently misinformed, at least in so far as the army is concerned, and the last clause of his assertion is misleading, and places the Medical Corps

of the Army, and I think of the Navy also, in a false position, which we naturally clear.

The law on the subject is clear, and the custom of the Army Board conforms to this law, namely, An Act of Congress approved June 23, 1874, "Candidates [for the Medical Corps of the Army] must be between twenty-one and twenty-eight years of age, and graduates of a medical college, having a thorough and complete course of medical education, evidence of which must be submitted to the Board before examination." Any graduate of a medical college, graduated on *merit*, without regard to period of study, would, I believe, stand a poor chance of passing an Army Medical Board, or even of coming before it for examination, if he should be so rash as to apply for an invitation to do so.

The law requiring that a candidate shall be a graduate of a medical college, is slightly varied by paragraph 2273 of Army Regulations, 1881, which requires the candidates to be "graduates of a regular medical college." This is further modified by General Order No. 65, Current Series, 1882, which directs that a candidate must be "a graduate of a regular medical college, evidence of which, his diploma, must be submitted to the Board."

If any non-graduate ever entered the Medical Corps, United States Army, prior to 1868, I have not heard of it, and I am sure none has since.

Yours very respectfully,

J. C. WORTHINGTON,
Captain and Assistant Surgeon, U. S. Army.

FORT WAYNE, DETROIT, MICH.,
March 26, 1883.

OBITUARY.

WILLIAM HOLME VAN BUREN, M.D., LL.D. (Yale).

ON Sunday morning, March 25th, after an illness that followed a slight stroke of paralysis, and had been prolonged through many months, Dr. Van Buren died.

He was prominent for so many years as a teacher of anatomy and surgery in New York, so widely and so favorably known as a writer, so generally sought in consultation, that the principal features of his life and character are doubtless familiar to most of our readers.

He was born in New York, April 5, 1819. His great-grandfather was a Holland physician, and came to New York in 1700, and practised medicine there until his death; he was succeeded by his son, the grandfather of the subject of this sketch, who practised in the same city until his death in 1812. Dr. Van Buren's mother returned to Philadelphia after the death of his father, which took place during his childhood, and there he was educated until he entered Yale College in 1834. He left his class during his junior year, returned to Philadelphia, and studied medicine in the University of Pennsylvania. In 1838, he went to Paris with his preceptor, and studied in that city until the autumn of 1839, occupying the position of *externe* under Velpeau at La Charité, and was graduated at Philadelphia in 1840. It is worthy of remark that the subject of his thesis was the immovable apparatus, the starch dressing, in the treatment of fractures; that even at this early period of his career he appreciated the value of and sought to popularize this method of treatment, which did not win general recognition until after the lapse of more than twenty years. The thesis received the signal honor of publication by the faculty of his school, and young Van Buren, who was just completing his twenty-first year, was invited to lecture upon the subject, and to give a practical demonstration of the method in the amphitheatre, where, the day before, he was sitting as a student.

Two months after graduation he was appointed assistant surgeon in the Army, ranking first in the competitive examination, and entered upon his duties in the following July. After a short service at the station in Buffalo, he went to Florida, on the staff of General Wool, returning in 1842 to marry the eldest daughter of Valentine Mott, whose acquaintance he had made in Paris. After a short stay in Florida he was assigned to duty in Washington, on the staff of General Scott. He resigned from the army in 1845, and took up his abode in New York.

After serving for several years as Prosector to the Chair of Surgery in the University of the City of New York, under Dr. Mott, he was appointed, in 1852, to the Chair of Anatomy in the same school, succeeding Prof. Granville Sharp Pattison, a position which he held until 1866, and combined with it the duties of Professor of Clinical Surgery, with especial reference to diseases of the genito-urinary system.

In 1847 he was appointed Surgeon of Bellevue Hospital, and in 1852 Surgeon of the New York Hospital, and subsequently held a similar position in St. Vincent's Hospital. For several years previous to his appointment as Professor of Anatomy, he gave private instruction to students of medicine, in connection with Dr. Metcalf and two or three other young practitioners.

His life during the first fifteen or twenty years of his practice in New York was extremely laborious. He spared no pains to perfect himself in his profession, to do thoroughly the work that came to him to be done. Success came promptly, and was complete; and it showed itself not only in the extent of his practice, the number of his *clientèle*, but also and especially in the recognition and respect given him by the profession.

At the outbreak of the war, when associations to aid the wounded were forming all over the country, he was chosen to represent the hospital surgeons of New York in a committee composed of representatives from four of these associations, to visit Washington for consultation concerning the needs of the service. Out of this visit grew the Sanitary Commission, in the organization and management of which he took a very prominent part during the five years, as a member of the Executive Committee. It brought him, also, into close relation with the officers of the Government, who showed their appreciation of his ability by offering him the position of Surgeon-General, and, on his declining to accept the offer, by asking him to name a candidate.

His health, which had been much affected by his residence in Florida, failed under the pressure of this work, and in 1863 he contracted typhus fever and was brought almost to the point of death. In 1865 he spent six months in Europe with his family, and on his return purchased a country-place at Shrewsbury, New Jersey, and began to reduce his active practice, spending a portion of each week at this place.

About 1868 he was appointed Professor of the Principles of Surgery at Bellevue Hospital Medical College, a position which he held until his death. In 1862, when only forty-three years old, he resigned from the New York Hospital, his only remaining active surgical position; he was appointed consulting surgeon a year or two afterwards, and in 1876 was elected President of its Medical Board, and delivered the public address in Chickering Hall on the opening of the new hospital building. At the time of his death, and for many years previously, he was a member of the consulting staff of Bellevue, the Woman's, and the Presbyterian Hospitals, and of several dispensaries. He was President of the New York Pathological Society for two terms, and Vice-president of the New York Academy of Medicine. In 1867 he was elected a corresponding member of the *Société de Chirurgie* of Paris, and in

1879 was one of the founders of the New York Surgical Society.

His published works consist of translations of Morel's *Histology*, and Bernard and Huet's *Operative Surgery*, a small volume composed largely of collected papers under the title of *Contributions to Practical Surgery*, 1865; *Lectures upon Diseases of the Rectum*, 1870, and a second greatly enlarged edition of the same in 1881, and a text-book on *Diseases of the Genito-Urinary System with Syphilis*, in collaboration with Dr. E. L. Keyes, in 1874. In addition to these he wrote and published many articles in the medical journals, including a recent valuable contribution to our own columns on the subject of litholapaxy (THE MEDICAL NEWS, January 14, 1882); a paper on "Aneurism," read before the International Medical Congress, in Philadelphia, in 1876, and (his last work) the article on "Inflammation" in the *International Encyclopædia of Surgery*, a paper in which his large experience, wide reading, sound judgment, and broad and scientific views appeared to great advantage.

Dr. Van Buren was preëminently a painstaking man. Whatever he did was done thoroughly and to the best of his ability. He was never careless or hasty in his work. He brought to his daily practice as well as to the preparation of his papers and lectures, his full and earnest attention, all the powers of a mind and judgment that were constantly strengthening by study and exercise, and a very keen sense of professional responsibility. His powers of analysis and exposition were remarkable. His success as a lecturer was of the highest order, and the intrinsic value of his written work was embellished by the accuracy, grace, and polish of his language.

As an operator, he is ranked among the first, by those who were familiar with his practice during the more active part of his career. The same extent and accuracy of knowledge; the deliberation, neatness, and grace of execution, which characterized his other work appeared also in this, and his sound judgment, fertility of resource, promptness of decision, and self-reliance carried him not only safely, but even brilliantly, through the most trying emergencies. It was a revelation even to see him pass a catheter, to see him bring even to that simple act so much dexterity, gentleness of touch, keenness of observation, and attention to detail. Notwithstanding the possession of all these qualities and his success as an operator, he disliked to use the knife, and he never resorted to it unless the indications were imperative; his counsel in this respect always leaned to the side of conservatism.

His mind was not a nimble one; he thought slowly and deliberately, but he thought well and deeply. His perception was keen, his observation close and far-reaching, his grasp of a subject broad and strong; his mind never rested on details, but always sought the deeper cause, the broader generalization. These qualities were familiar to all who sought him in consultation, and are to be recognized in his printed works, and in his influence upon the general conception and treatment of the specialties with which he was identified. At the same time, he had a very lively sense of the value of details, especially in treatment, and he devised some very valuable and ingenious additions to the surgical armamentarium.

In person, he was a large, handsome, dignified man, with whom no new acquaintance would be familiar, whom no one would treat without respect. Quiet and self-contained in manner, scrupulously neat and careful in person and dress, he always appeared for what he was—a gentleman by birth and breeding. When he gave his trust he gave it completely, and his judgment of character was seldom at fault, his confidence rarely abused. His sense of professional re-

sponsibility was great, and while he often refused to take a new case, he never neglected one that was under his care. Even within a few years, after he had long ceased to visit in practice, and at a time when he was guarding his failing health most carefully, he has left his bed at midnight and driven ten miles to answer a call from a gentleman who had had a chill after the passage of a catheter in his office, in the morning. And often when consulted in a case, even a hospital one, which he had turned over to another, he would say, "Well, I suppose I have some responsibility in the matter; I will see him with you."

His acquirements, outside of his profession, were considerable; his literary tastes and habits strong and cultivated. He had a good knowledge of French, some knowledge of German, and occupied a portion of his leisure in reading the Latin classics, while his acquaintance with the best English literature was wide and accurate. His extensive knowledge, scholarly tastes, quick humor, and fertile fancy made him a delightful companion, and almost his last words, as he was sinking into the unconsciousness that preceded his death, were a playful affectionate recognition of one who has been to him for many years as devoted as a son.

"He was a man, take him for all in all,
I shall not look upon his like again;"

NEWS ITEMS.

RICHMOND, INDIANA.

(From our Special Correspondent.)

EPIDEMIC OF MEASLES.—Richmond, Indiana, was invaded by an epidemic of measles, continuing through the last four months of 1882, wherein there was an extraordinary large number of cases, and but few deaths. The County Health Officer reports 3,536 cases of measles in a population of 15,543, with but 12 deaths from measles directly, 3 deaths from whooping-cough following measles, and 1 death from croup following measles.

LONDON.

(From our Special Correspondent.)

URINE-TESTING.—At the last meeting of the Clinical Society of London the important subject of urine-testing was brought up by Dr. George Johnson. Already at the Pathological Society Drs. Pavy, Oliver, and Ralfe have this session given demonstrations of new tests, etc. Dr. Ralfe's communication was of considerable importance. It was to the effect that, although picric acid, ferrocyanide of potassium, and the other new tests are valuable as affording us means of detecting very minute traces of albumen, yet they are imperfect, as not by themselves distinguishing between the different forms of albumen found in urine. He showed—1. That urine precipitated by ferrocyanide of potassium, and also coagulated by heat, contained serum albumen. 2. Urine precipitated by ferrocyanide of potassium, and not coagulated by heat till citric acid be added, contains alkali-albumen, or casein. 3. While if the addition of carbonate of sodium be necessary before coagulation by heat occurs, the albumen is in the form of acid-albumen or syntonin. 4. Urine coagulated by ferrocyanide of potassium, and not precipitated by heat at all, but giving a red color with an alkaline solution of copper sulphate, contains parapectone. Heat, therefore, must be employed in all cases where the more delicate tests have shown the presence of albumen, to determine what form that albumen is present in. This knowledge throws much light upon the other conditions of the urine.

A CASE OF FRACTURE OF THE RADIUS AND DISLOCATION FORWARDS OF THE ULNA AT THE WRIST, IN WHICH THE LOWER END OF THE LATTER BONE WAS REMOVED TO EFFECT REDUCTION.—MR. R. I. GODLEE, at the same meeting, related the history of a patient, aged twenty, who was jumping a high jump at a gymnasium, when his feet slipped forwards on a badly secured mat, and the whole weight of his body fell suddenly on his hands, which were placed behind him. The left radius was fractured at the junction of the middle and lower thirds, the *upper end* of the fracture being compound; the lower end of the ulna was displaced forwards and projected in front of the carpus beneath the skin. All attempts at reduction with or without an anæsthetic proved unsuccessful. An incision was made over the lower end of the ulna, and a hook was placed under the tendon of the carpi ulnaris, which had slipped behind the bone; but the bones could not be replaced until first the styloid process and then the lower end of the ulna had been sawn off. The wound was treated antiseptically, and healed without any inflammatory disturbance. In ten days it was placed in a plaster-of-Paris apparatus, and in about six weeks passive movement was commenced. The limb is now about as useful as the other, and can be employed for gymnastic exercises as well as for the ordinary uses of daily life; but pronation is not quite as free as before. The patient was shown.

MR. CLEMENT LUCAS stated that he had excised the lower end of the ulna, and the case recovered without any adduction; this he believed to be due to the greater power of the abductor muscles.

MR. C. HEATH said that he had had a similar experience, and thought the operation of excision of the lower end of the ulna a very good one.

MR. R. I. GODLEE replied that there was no adduction of the hand in cases of congenital absence of the ulna, and this he explained by the fact that the carpus articulated with the radius, not the ulna.

ACUTE NECROSIS OF THE RIGHT ORBITAL PLATE OF FRONTAL BONE.—DR. PEARSON and DR. BROADBENT reported at the same meeting a case of a girl, æt. nine years and eight months, in whom four days after exposure to cold on a foggy November afternoon, symptoms of stiff neck, relaxed throat, causing restless nights, began, but so gradually that medical attendance was not called in till the fourth day. When first seen, the noticeable point in the case was that the child put both hands to her head to lift it when asked to sit up in bed. On the fifth day of the disease there was marked improvement, after a saline aperient and four-grain doses of salicylate of sodium every four hours. In the morning the right upper eyelid had got puffy, but the swelling went down again. There were slight droppings of blood from the nose three separate times during the day. On the sixth day, after a restless night, with some wandering, followed by a morning sleep of two and a half hours, the child woke up sufficiently well to listen to fairy tales and talk about them. She felt the neck so much better that she volunteered to get out of bed alone to show her throat, but still holding one hand lightly to the head. There was some sensitiveness to light, and the right eyelid was again puffed. The same evening great restlessness set in, the child throwing the legs and arms about and calling out. The tumefaction of the right eyebrow had now markedly increased, and there was strong delirium. The temperature at 11.30 P. M. was 103.3°, pulse 140, respiration 38. Bromide of potassium was added to the salicylate mixture, and, after a sleep of an hour and twenty minutes, the pulse was 120, and temperature 101.6°. On the seventh day the right eyebrow was quite tense and glazed, and livid with tumefaction, and delirium continued. At 10 A. M.

the temperature was 104°. Two leeches were applied to the right temple, and three grains of calomel were given, to be followed by a saline purge. Towards evening the strength perceptibly diminished. Just after midnight the pulse was 138, respiration 52, temperature 105.7°. At 4.30 A. M., temperature 106.4°; 6.30 A. M., temperature 107.7°; at 9.45 A. M., temperature 107.9°; and death took place at 10.45 on the morning of the eighth day from the commencement of symptoms.

Post-mortem examination, five hours after death.—At once on removing the scalp, the frontal portion of the longitudinal sinus showed itself over-charged, staining the periosteum externally. On lifting the brain, the dura mater covering the petrous portion of the right temporal bone was found smeared with thick yellow lymph. The same lymph smeared the pons and the parts comprised in the circle of Willis. The right temporo-sphenoidal lobe of the brain was protuberant, due to serous infiltration from obstruction to the venous return. The right optic nerve and the fat surrounding it were stained with the same clinging yellow lymph. The periosteum of the right orbital plate of the frontal bone was stained with inflammation, and destroyed in patches.

MR. PEARCE GOULD asked if any pulsation was at any time noticed in the orbital swelling, as thrombosis of the cavernous sinus was stated to be one of the causes of pulsating exophthalmos, although that condition was at any rate more generally due to arterio-venous communication.

MR. J. BLACK asked if the swelling fluctuated, and whether an incision would have been of any avail.

DR. MAHOMED referred to a similar case in which the septic nature of the affection was shown after death by the presence of numerous abscesses in the brain.

DR. BROADBENT replied that there was neither pulsation nor fluctuation in the swelling. The orbital periosteum was intact, and the effusion within it was serous. The dura mater was pierced in several places. He had considered that the free mobility of the eye, and entire absence of proptosis excluded any inflammatory effusion within the orbit.

ON PICRIC ACID AS A TEST FOR ALBUMEN AND SUGAR IN THE URINE.—The following is an abstract of DR. GEORGE JOHNSON'S paper on this interesting subject, also presented at this meeting of the Clinical Society:

Although picric acid has for ten years or more been used as a test for albumen in the urine, its value has not been fully appreciated. It may be used in the form of a saturated aqueous solution, made by dissolving the crystals in about fifty times their volume of boiling water, or in the form of powder, which may conveniently be carried in a pocket-case.

The solution poured on the surface of the urine in a sloping test-tube will cause opalescence in a specimen of albuminous urine diluted much beyond the point at which nitric acid fails to act. The powder of crystals equal in bulk to a pepper-corn, when shaken up with about a drachm of urine will be dissolved, and immediately coagulate any albumen present.

Picric acid boiled with a solution of potash is a most delicate test for glucose. The reduction of yellow picric to the deep red picramic acid by glucose when boiled with potash, although noticed by Bram nearly twenty years ago, appears not to have been utilized as a practical test; 3j of a solution of grape sugar (gr. j to 3j) is mixed with 3ss of liquor potassa (B. P.) in 10 of a saturated solution of picric acid and made up to 3iv with distilled water. The mixture is placed in a boiling tube ten inches long and three-quarters of an inch wide, having a mark made at the height of 3iv. It is then heated to the boiling-point and kept boiling for sixty

seconds. The resulting color indicates gr. $\frac{1}{3}$ sugar to $\frac{1}{3}$ j. This color may be exactly imitated by a solution of acetate of iron with excess of acetic acid, which is used as a standard in making a quantitative analysis. The depth of color is directly proportioned to the amount of sugar present to decompose the picric acid.

When the color is deeper than the standard, the dark liquid is diluted until it and the standard have the same tint. The dilution is effected in a tube twelve inches long, divided into equal $\frac{1}{4}$ and $\frac{1}{100}$ parts. By the side is a tube of equal size containing the standard color.¹ A more exact comparison of the colors is made by looking through equal columns of the saccharine liquid and the standard in flat-bottomed tubes held over white paper or porcelain. Ten minims of solution of picric acid are rather more than equivalent to the sugar ($\frac{1}{3}$ gr.) in $\frac{1}{3}$ j of a solution containing gr. j to $\frac{1}{3}$ j.

In making an analysis, the picric acid must be in proportion to the amount of sugar. If the proportion of sugar be as high as six grains to the ounce, about a drachm of solution of picric acid will be required for a drachm of the sugar solution. When the amount of sugar is more than six grains to the ounce, the liquid should be diluted in a definite proportion before it is analyzed. Distilled or pure rain water is used for dilution. Hard water becomes turbid when mixed with caustic potash. If undiluted urine is rendered turbid by phosphates in process of testing, it should be cleared by filtration. The measurements and dilutions must all be accurate.

The presence of albumen, even in large amount, does not interfere practically with the picric acid test. The accuracy of the test is proved by practically identical results from analyzing the same specimens by Dr. Pavy's ammonio-cupric solution, and by picric acid and potash. Some tabular statements of results are given.

An analysis of about three hundred specimens of normal urine by the picric acid process indicates the constant presence of a substance capable of reducing picric acid and cupric oxide in proportions equivalent to from 0.5 to 0.7 grain of glucose per ounce, but apparently differing from glucose in the fact that it cannot be made to undergo the vinous fermentation under the influence of heat.

DR. SOUTHEY and MR. MCHARDY both spoke of the great delicacy of the picric acid test for albumen, and the former said that urine which must be considered normal often contained albumen.

DR. JOHNSON doubted very much whether even the smallest traces of albumen are found in urine as a physiological result.

SIR JOSEPH FAYRER took the chair at the meeting of the Medical Society of London for the first time as the newly elected President. He announced that next week Dr. Manson, of China, will exhibit to the Society a newly discovered parasite—*Distoma Ringeri*—and will read a paper on the disease caused by it—endemic hæmoptysis.

THE ERICHSEN TESTIMONIAL.—On Saturday, March 10, at a large gathering of Professor Erichsen's old pupils and friends, he was presented by them with a marble bust of himself by Thornycroft, and a purse of money, which he at once gave to University College, to found in perpetuity a Prize for Operative Surgery.

INVESTIGATION OF CATTLE DISEASES.—A press dispatch from Washington states that Dr. D. E. Salmon, who has been for several years employed by the Department of Agriculture to conduct investigations into the diseases of swine and poultry, has been called to

Washington by Commissioner Loring, to conduct like investigations on a more elaborate scale. Land is to be leased, and animals provided for experiments on inoculation, etc., and the Pasteur system of inoculation will be adopted with such additions and modifications as have been suggested by Dr. Salmon's own discoveries and experiences. The investigation will be conducted with a special view of ascertaining the nature, and the means of prevention and cure of Texas cattle fever, pleuropneumonia, and hog and chicken cholera. The results of the researches already made by Dr. Salmon are such as to make him feel reasonably confident that he will eventually be able to discover remedies which will enable any farmer to prevent or cure the diseases mentioned.

THE PROTECTION OF MEMPHIS FROM YELLOW FEVER.—According to a press dispatch, owing to the unsatisfactory condition of the laws governing quarantine at the mouth of the Mississippi, the authorities of Memphis have determined to inaugurate a system of precautionary measures that will enable them to prevent the introduction of contagious diseases during the summer months. A few days ago President Holden, of the Legislative Council, petitioned the State Legislature for an appropriation to defray the expenses of local quarantine in case of necessity, and the President of the City Board of Health has issued a proclamation warning the citizens that a thorough house-to-house inspection would begin Monday, and every building, front and back yards, outhouses, stables, etc., would be thoroughly examined, with a view to having them put in the most complete sanitary condition.

The President of the Council backs up the proclamation with the warning that the owners of unsanitary premises will be punished to the fullest extent of the law for violations of the sanitary ordinance. This system of inspection will be continued throughout the summer, and until all possibility of danger is passed. The first intimation of yellow fever or other contagious diseases, at New Orleans or other points on the lower Mississippi, will be the signal for the establishment of a rigid quarantine against the places. The troubles of 1878 and 1879 have not been forgotten, and the authorities are determined that they shall not be repeated, if it is in the power of man to prevent them.

AMERICAN LARYNGOLOGICAL ASSOCIATION.—The Fifth Annual Convention of the above Association will be held in the hall of the Academy of Medicine, No. 12 West Thirty-first Street, New York City, commencing Monday, May 21, 1883, at 10 A. M., and continuing during the two following days.

MEETINGS OF STATE MEDICAL SOCIETIES.—The Kentucky Medical Society will hold its annual meeting on April 4th, and on the same day the Mississippi State Medical Society will meet at Meridian, and the Louisiana State Society at Shreveport.

COMMENCEMENT OF THE IOWA COLLEGE OF PHYSICIANS AND SURGEONS.—The Iowa College of Physicians and Surgeons held its commencement March 6th, and granted diplomas to three graduates.

THE DISPENSARY OF THE PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE has treated during the first two weeks of its existence 397 patients.

LECTURES UPON MATERIA MEDICA AT THE U. S. NATIONAL MUSEUM.—Dr. D. W. Prentiss has been invited to deliver a course of lectures in connection with the department of Materia Medica of the National Museum.

¹ This picro-saccharimeter was made by E. Cetti, 36 Brooke St., Holborn, E. C.

The course will consist of eight lectures, and will be illustrated by specimens and other material from the collections of the Museum.

The lectures will be delivered at 4 o'clock on successive Saturday afternoons, beginning Saturday, April 7.

These lectures are free. Persons desiring to attend must be provided with tickets, which may be obtained by application through the mail or in person, to Mr. S. C. Brown, Registrar of the Museum.

CINCINNATI TRAINING SCHOOL FOR NURSES.—A school for the systematic training of nurses has been started in Cincinnati, under the presidency of Dr. Geo. B. Orr.

A NEW NEW YORK STATE MEDICAL SOCIETY.—The conviction that this State must have a medical society, in affiliation with the American Medical Association and the best physicians of this country and Europe, is becoming more general and profound. That the merest fraction of the medical corps of this State is to dominate the entire body, to disrupt, degrade, and disgrace it, no one can believe; and physicians of the State will deserve ruin and disgrace if they passively submit to be thus outraged and trampled upon. It needs but a strong "call," and the new State Society, supported by the whole country, and all the medical press (two journals excepted), would spring into vigorous being.—*Gaillard's Med. Journal*, March 10, 1883.

HEALTH IN MICHIGAN.—Reports to the State Board of Health, for the week ending March 17, 1883, indicate that bronchitis and pneumonia have decreased in area of prevalence. There was no marked increase in any disease reported.

Including reports by regular observers and by others, diphtheria was reported present during the week ending March 17, and since, at sixteen places, scarlet fever at eighteen places, and measles at fourteen places. No smallpox reported in Michigan.

PROF. NEUMANN, the successor to the chair of the late Professor von Sigmund, in the University of Vienna, on February 8, delivered an eloquent eulogy of his predecessor, in which he claimed for him the honor of first having instituted a systematic clinic of his specialty.

PROF. V. BERGMANN, who for some weeks has been incapacitated from his duties on account of sickness, has now entirely regained his health.

PROF. V. BERGMANN'S SUCCESSOR.—**PROF. MAAS** has been appointed Professor of Surgery in Würzburg, in the place vacated by the resignation of Prof. Bergmann.

PROF. VON ARLT has been decorated with the star of a Commander of the Order of Francis-Joseph.

THE LIBRARY OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY of London contains 33,500 volumes.

SANITARY EXHIBITION AT BERLIN, GERMANY.—It will be remembered that it was the intention of the German authorities to open a Hygienic Exhibition, in Berlin, in May of last year. Unfortunately, however, a few days before the proposed opening the magnificent building, which had been constructed for the purpose of the exhibition, was destroyed by fire. This caused a temporary suspension of the whole matter, but the deep interest felt in the success of such an undertaking by the Emperor, Empress, Crown Prince, and medical and scientific men, has tended to so strengthen the

committee having the matter in charge, that new buildings have been constructed and enlarged, and improved accommodations made for such an exhibition; and it is now expected that it will be ready to be opened on the first day of May next.

DRAIN-TESTING.—The Sanitary Inspector for Glasgow reports that of 236 properties, the drains of which were examined last year, only seven were found thoroughly tight and efficient—229 permitting the escape of sewer-air into the dwellings.

ASTLEY COOPER PRIZE.—The next triennial prize of \$1500 will be awarded to the author of the best essay or treatise on "Diseases and Injuries of the Nerves and their Surgical Treatment, together with the operations performed upon nerve-trunks in the treatment of various diseases, and descriptions of the changes which ensue in other structures as well as in the nerves themselves from these operations." The condition annexed by the testator (the late Sir Astley P. Cooper, Bart.) is, "That the essays or treatises to be written for such prize shall contain original experiments and observations which shall not have been previously published, and that each essay or treatise shall (as far as the subject shall admit of) be illustrated by preparations and by drawings, which preparations and drawings shall be added to the museum of Guy's Hospital, and shall, together with the work itself, and the sole and inclusive interest therein and the copyright thereof, become henceforth the property of that institution, and shall be relinquished and transferred as such by the successful candidate." The essays must be written in the English language, or, if in a foreign language, accompanied by an English translation, and must be sent to Guy's Hospital on or before January 1, 1886, addressed to the physicians and surgeons of Guy's Hospital.—*Lancet*, March 10, 1883.

PRIZE FOR THE SOLUTION OF THE QUESTION AS TO THE PREVENTION OF POLLUTION OF RIVERS.—The King of Saxony offers a prize of a silver "jardinière," with nine hundred marks, to be awarded by the German Fishery Commission for the best essay on "The Pollution of Water-courses and its Prevention, with special reference to the Maintenance of the Life and Health of Fish."

Essays are to be sent to Dr. P. Boerner, 8 Burggrafen Strasse, Berlin, W., before December 31, 1884, from whom further information may be obtained.

COMPLIMENTARY DINNER TO DR. OLIVER WENDELL HOLMES.—The leading members of the medical profession of New York will give a complimentary dinner to Dr. Oliver Wendell Holmes at Delmonico's, Thursday evening, April 12. It is tendered as an expression of appreciation of the honor Dr. Holmes has won for American medical and general literature during the past forty years.

NEPHRECTOMY.—This rare operation was performed at the Queen's Hospital, Birmingham, on March 3d, by Mr. West, and the case was reported on the 7th to be doing well. The patient on whom the operation was performed was a boy, aged fifteen, who, on last Guy Fawkes day, sustained a traumatic rupture of the left kidney. Suppuration ensued, and for this aspiration and then free incision were employed; but as the boy was discharging about eighty ounces of putrid ammoniacal urine mixed with pus through the loin, and as he was getting into a hectic condition, Mr. West decided to remove the kidney. The kidney was of great size, and was full of suppurating cysts.—*Lancet*, March 10, 1883.

LEPROSY IN HAWAII.—The *Commercial Advertiser* of Honolulu, referring to reports of the general spread of leprosy in Hawaii, says: "The districts of Wailuka, Waikae, Wakawas, and Ulupalakua, of the island of Wauai, comprising an area of 300 square miles of the most densely populated portion of the kingdom, with 10,000 inhabitants, have been thoroughly searched for lepers by the Board of Health. The result was that twenty-eight native and no foreign lepers were found. There are ten foreign lepers at the leper settlement at Molokai, most of whom contracted the disease by licentiousness."

BOSTON PLUMBING ORDINANCE.—The following is the text of the ordinance regulating plumbing in the city of Boston, which passed the City Council the 16th inst., and has received the Mayor's signature.

"SECTION 1. No person shall carry on the business of plumbing unless he shall have first registered his name and place of business in the office of the Inspector of Buildings, and notice of any change in the place of business of a registered plumber shall be immediately given to said Inspector.

"SECT. 2. Every plumber, before doing any work in a building, shall, except in the case of repairs or leaks, file at the office of the Inspector, upon blanks to be provided for the purpose, a notice of the work to be performed; and no such work shall be done in any building without the approval of said Inspector.

"SECT. 3. Every building shall be separately and independently connected with the public sewer, when such sewer is provided; and, if such sewer is not provided, with a brick and cement cesspool of a capacity to be approved by the said Inspector.

"SECT. 4. Drains and soil-pipe through which water and sewage are used and carried shall be of iron, when within a building, for a distance of not less than five feet outside of the foundation walls thereof. They shall be sound, free from holes and other defects, of a uniform thickness of not less than one-eighth of an inch for a diameter of four inches or less, or five-thirty-seconds of an inch for a diameter of five or six inches, with a proportional increase of thickness for a greater diameter. They shall be securely ironed to walls, laid in trenches of uniform grade, or suspended to floor-timbers by strong iron hangers, as the said Inspector may direct. They shall be supplied with a suitable trap, placed, with an accessible clean-out, either outside or inside the foundation wall of the building. They shall have a proper fall towards the drain or sewer, and soil-pipes shall be carried out through the roof, open and undiminished in size, to such height as may be directed by said Inspector; but no soil-pipe shall be carried to a height less than two feet above the roof. Changes in direction shall be made with curved pipes, and connections with horizontal pipes shall be made with Y-branches.

"SECT. 5. Rain-water leaders, when connected with soil or drain-pipes, shall be suitably trapped.

"SECT. 6. Sewer, soil-pipe, or waste-pipe ventilators shall not be constructed of brick, sheet-metal, or earthen-ware, and chimney-flues shall not be used as such ventilators.

"SECT. 7. Iron pipes, before being put in place, shall first be tested by the water or kerosene test, and then coated inside and out with coal-tar pitch, applied hot, or with paint, or with some equivalent substance. Joints shall be run with molten lead, and thoroughly calked and made tight. Connections of lead pipes with iron pipes shall be made with brass ferules, properly soldered and calked to the iron.

"SECT. 8. Every sink, basin, bath-tub, water-closet, slop-hopper, and each set of trays, and every fixture having a waste-pipe, shall be furnished with a trap,

which shall be placed as near as practicable to the fixture that it serves. Traps shall be protected from siphonage or air-pressure by special air-pipes of a size not less than the waste-pipe; but air-pipes for water-closet traps shall be of not less than two-inch bore for thirty feet or less, and of not less than three-inch bore for more than thirty feet. Air-pipes shall be run as direct as practicable, and shall be of not less than four-inch bore where they pass through the roof. Two or more air-pipes may be connected together or with a soil-pipe; but in every case of connection with a soil-pipe, such connection shall be above the upper fixture of the building.

"SECT. 9. Drips or overflow pipes from safes under water-closets and other fixtures, or from tanks or cisterns, shall be run to some place in open sight, and in no case shall any such pipe be connected directly with a drain, waste-pipe, or soil-pipe.

"SECT. 10. Waste-pipes from refrigerators or other receptacles in which provisions are stored, shall not be connected with a drain, soil-pipe, or other waste-pipe, unless such waste-pipes are provided with traps, suitably ventilated, and in every case there shall be an open tray between the trap and the refrigerator.

"SECT. 11. Every water-closet, or line of water-closets on the same floor, shall be supplied with water from a tank or cistern, and the flushing pipe shall not be less than one inch in diameter.

"SECT. 12. Pipes and other fixtures shall not be covered or concealed from view until after the work has been examined by the said Inspector, and he shall be notified by the plumber when the work is sufficiently advanced for inspection.

"SECT. 13. Plumbing work shall not be used unless the same has first been tested by the said Inspector with the peppermint, ether, or water test, and by him found satisfactory.

"SECT. 14. No steam-exhaust shall be connected with any soil or waste-pipe, or drain which communicates with a public sewer.

"SECT. 15. Water-pipes in places exposed to frost shall be packed with mineral wool, or other substances equally good, and they shall be cased to the satisfaction of the said Inspector.

"SECT. 16. A grease trap shall be constructed under the sink of every hotel, eating-house, restaurant, or other public cooking establishment.

"SECT. 17. The provisions of Sections 3-13, inclusive, and of Section 15 of this ordinance, shall apply only to buildings erected, or to work performed, after its passage."—*Sanitary Engineer*, March 22, 1883.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 19 TO MARCH 26, 1883.

BURTON, HENRY G., *Captain and Assistant Surgeon*.—To be relieved from duty in the Department of the East, and will report in person to the commanding general Department of Dakota, for assignment to duty.—*Par. 1, S. O. 67, A. G. O., March 22, 1883.*

PORTER JOSEPH Y., *Captain and Assistant Surgeon*.—To be relieved from duty in the Department of the South, and will report in person to the commanding general Department of Texas, for assignment to duty.—*Par. 1, S. O. 67, A. G. O., March 22, 1883.*

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia